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GLOBAL AIRLINE GUIDE 2016 Part 1

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Airliner World

the global airline scene

THE FORCE AWAKENS

ANA's **Star Wars** Jets

Air India

A Tale of Two Airlines

AeroMobile
Connecting the World



HAV Airlander

Return of the Airship?



Caribbean Odyssey

Hunting Classic Aircraft

Austrian Technik We Keep Aircraft Moving

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Welcome



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THIS IMAGE: **Joe Sutter** (inset) and a **Cargolux Boeing 747-8**. BOEING

My welcome this month takes on a rather melancholy note as we remember the late and great Joseph 'Joe' Sutter, who passed away on August 30 aged 95. As an engineer with Boeing, he had a hand in many of the US manufacturer's iconic civil jets including the Model 367-80 and its 707 offshoot, the 727 tri-jet and the best-selling 737. However, he is perhaps best known as the driving force behind the giant Jumbo Jet, a role that earned him the moniker 'the Father of the 747'.

Sutter was the chief engineer on the programme and is credited with leading the development of the world's first widebody aircraft. At the time, it represented a huge gamble – the prototype 747 stood six storeys high with a fuselage measuring 225ft-long, dwarfing its rivals and stablemates in both size and expense. It was a staunch act of defiance at a time when the industry was hell-bent on speed rather than size, but the Jumbo set a benchmark by which all subsequent commercial aircraft programmes have been judged.

What this aircraft did for Boeing was remarkable. Ray Connor, President and CEO of Boeing Commercial Airplanes reflected: "[Sutter] personified the ingenuity and passion for excellence that made Boeing airplanes synonymous with quality the world over." He added: "His team, along with thousands of other Boeing employees involved in the project, became known as

the 'Incredibles' for producing what was then the world's largest airplane in record time – 29 months from conception to roll-out. It remains a staggering achievement and a testament to Joe's 'incredible' determination."

Even more telling was the impact the 747 had on the wider aviation industry and indeed the world. The 'Queen of the Skies' brought air travel to the masses, opening up affordable international flights that made the world significantly smaller.

Growing up in the North East of England, my earliest experiences of Sutter's 'baby' were the 747s of Lufthansa and KLM, arcing their way overhead from mainland Europe bound for exotic destinations such as New York, Los Angeles and San Francisco and leaving contrails in their wake. One can never truly appreciate the grandeur of the 747 from six miles below, but it was these behemoths that motivated me to pursue my interest in aviation.

Thank you Joe, you were an inspirational character who has left a remarkable legacy – wishing you blue skies and tail winds.

Craig West
Editor



FRONT COVER: **ANA's stunning BB-8-liveried Boeing 777**. KEISHI NUKINA

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AIRLINER WORLD'S COMPREHENSIVE COVERAGE OF WORLDWIDE NEWS

Italy's New 'Air Force One'

The Aeronautica Militare (Italian Air Force) has taken delivery of former Etihad Airways Airbus A340-541, I-TALY (c/n 748). The lavishly appointed jet, operated by 31° Stormo at Rome/Ciampino, will be used as a VIP transport for the Italian Head of State and other government officials in place of the smaller A319CJ. MARCO ROSSI



Promoting Partnerships

British low-cost carrier easyJet has applied special markings to Airbus A320-214s, G-EZPC (c/n 6981) and 'PD' (c/n 7040), to promote its long-standing partnership with car rental company Europcar. The latter is pictured at London Luton Airport on August 23. TOM COLE



Norwegian Set for US Charters

NORWEGIAN WILL enter the US leisure market after signing its first charter contracts. The deals, with Apple Vacations and Funjet Vacations, are valued at a combined £10m and will see the Oslo-headquartered carrier base three Boeing 737-800s in Milwaukee and Chicago between December and April. The jets are expected to operate more than 600 services to leisure destinations in

Mexico and the Caribbean. Commenting on the agreements, Norwegian's Chief Commercial Officer Thomas Ramdahl said: "We are very excited to expand our charter operations to the United States and partner with Apple Vacations and Funjet Vacations. We look forward to having more Americans enjoy the Norwegian experience on their way to what will hopefully be a fantastic holiday."

London City Gets the Nod...

LONDON CITY Airport has received government approval for its £344m transformation project. The UK's Chancellor of the Exchequer Philip Hammond confirmed that planning permission had been granted for the City Airport Development Programme (CADP), which includes the construction of seven new aircraft stands, a parallel taxiway and an extension to the passenger terminal.

London City Airport welcomed a record-breaking 4.3 million passengers last year and said the upgrades will enable 6.5 million people to use the airport by 2025. The planning decision was formally

approved by the Transport Secretary Chris Grayling and the Secretary of State for Communities and Local Government Sajid Javid.

Announcing the decision Hammond said: "London City Airport's ambitious growth plans will boost international connections, strengthening the City of London's links to destinations across the world and send a clear signal that Britain is open for business. Making it easier to visit and do business in the City of London will help drive forward our economy and further strengthen the city's status as the world's leading financial centre."

London City Airport estimates the expansion will create 1,600 airport jobs, while construction work will add a further 500. The CADP could potentially contribute £1.5bn to the UK economy by 2025.

A statement on the airport's website added the expansion also "opens up the possibility of more destination choice, with quieter, more fuel-efficient, 'next generation' aircraft unlocking the opportunity to fly greater distances to destinations in the Gulf and Middle East, Turkey, Russia and the east coast of the United States".

(Photo London City Airport)



Record-Breaking Birmingham

BIRMINGHAM AIRPORT is in a celebratory mood after recording its busiest ever year. The Midlands facility welcomed 11 million passengers over the 12 months up to August, just a year after passing the ten million milestone. Commenting on the landmark, Birmingham Airport's CEO Paul Kehoe said: "Reaching ten million passengers last August was a big milestone in the airport's history but reaching 11 million is an absolute game changer. It shows that demand for flying to and from the Midlands is rapidly rising and this is only expected to continue as national and international investment in the region continues and the Midlands Engine powers on."

"We have celebrated a huge number of accomplishments recently, including welcoming an astonishing 13 new airlines to the airport, creating an even stronger network of global routes. We now have over 440 direct or one-stop flights globally with 50 airlines and proudly handle the magnificent [Airbus] A380 and [Boeing 787] Dreamliner, daily."

The airport also recorded its busiest single day to date on August 19 when it handled 44,767 passengers, an increase of 14.1% over its previous best on August 13, 2015.

Green Light for Iberia

IBERIA HAS received regulatory approval to co-operate on services between Europe and Japan. The International Airlines Group (IAG) subsidiary has been granted anti-trust immunity (ATI) by Japan's Ministry of Land, Infrastructure, Transport and Tourism and is now expected to join the existing joint business between oneworld partners Japan Airlines (JAL), British Airways and Finnair.

The approval, announced on August 16, will permit the four carriers to co-ordinate fares and schedules, and share revenue on flights to and from Japan.

"We would like to thank the regulators for approving our ATI application for Iberia joining Japan Airlines, British Airways and Finnair in our current joint business between Japan and Europe," JAL President Yoshiharu Ueki said. "This move will allow us to further strengthen our partnership with oneworld partner airlines, and will provide our customers with further benefits when travelling between Japan and Europe." The Spanish airline is expected to enter the joint business on October 18, coinciding with the launch of its thrice-weekly service from Madrid to Tokyo/Narita.

Luis Gallego, President and CEO of Iberia added: "We are very happy to launch our non-stop flights to Japan as part of this joint business. We want to offer our customers more and better travel options and this will help us do so. We are also glad to contribute to the strength of the joint business and the oneworld alliance."



Heathrow Ramps up Noise Monitoring

LONDON/HEATHROW has started installing the first of 50 new noise monitors as part of a long-term plan to provide real-time noise measurements to local residents. The airport is adding the new equipment, and upgrading its existing monitoring network, under the latest version of its *Blueprint for Noise Reduction* published on August 17. The airport said the ten-point plan was updated as a direct result of its engagement with resident groups through the Heathrow Community Noise Forum. It added that the new monitors will help it, and residents, gain a better understanding of the impacts of aircraft noise in local areas, and will complement the modelling of the existing fixed and mobile monitors.

The data gathered will be shared publicly through the airport's noise website and the Heathrow Community Noise Forum – longer term, the London hub is also planning to use the system to provide real-time noise measurements to residents. Heathrow CEO John Holland-Kaye said: "We share a common objective with local residents: we want to make the skies around us quieter. The arrival of new, quieter aircraft and the start of our programme to install 50 new noise monitors will help us to accelerate the reduction in the noise impacts of Heathrow." Other measures outlined in the new blueprint include the introduction of a voluntary Quiet Night Charter to reduce the impact of Heathrow's night operations, a new web-based tool –

xPlane – that gives residents access to flight data specific to their location, and lower landing charges for quieter aircraft. Heathrow said the latter, due to be introduced in January 2017, will make it the first airport in the world to differentiate charges for new Chapter 14 aircraft such as the Airbus A350 XWB. Heathrow added that, as a result of incentives and evolving technology, the airport is quieter now than at any point since the 1970s, despite the doubling of aircraft movements. New data released under the airport's Fly Quiet League table shows a 5.5% increase in the proportion of quieter, new-generation types being used at the hub over the same period last year. (Photo Heathrow Airport)

A Jet Named Annalise...

ASL Airlines has paid tribute to one of Ireland's Olympic medallists by naming an aircraft in their honour. The Boeing 737-31S, EI-STA (c/n 29057), has been christened Annalise Murphy following the 26-year-old sailor's silver medal success at Rio 2016. The Olympian is the daughter of the Dublin-based carrier's chief pilot Captain Con Murphy. ASL AIRLINES



Atlantic's Yellowbird

West Atlantic Group's Boeing 737-4Q8(SF), G-JMCR (c/n 25372), now wears DHL markings. The jet, which was repainted in mid-August into the white and yellow livery carried by DHL partners, is one of four examples flown on behalf of the European logistics giant under a long-term contract. ROB EDSON



Atlantic Heads South

FAROESE FLAG carrier Atlantic Airways is set to add new services to a host of leisure destinations across the Mediterranean after signing a five-year agreement with Danish travel agency FolkeFerie.dk. Under the terms of the deal, the Vágar-based airline will make use of spare aircraft capacity outside of its core scheduled service operation initially to fly tourists to Malta, Madeira and Greece.

Jóhanna á Bergi, CEO of Atlantic Airways, said: "This agreement is an excellent opportunity for us to plan our charter operations even as we prioritise our routes that have the Faroe Islands as their hub. With this agreement, we can rent out part of our excess capacity to the popular Danish travel agency, which is a stable and very experienced partner." Elsewhere, Atlantic Airways has abandoned plans to add a second, smaller aircraft type to its fleet. The new aircraft had been earmarked for its thinner 'NORTH' routes to Iceland, Norway and Scotland but the carrier will instead remain an all-Airbus operator. It currently flies two A319s, with an A320 due to arrive in December.

Brussels Calling for bmi regional

BMI REGIONAL has extended its code-share partnership with Brussels Airlines. Under the terms of the new agreement, launched on August 1, passengers flying with the British carrier can now access seven additional routes flown by its Belgian counterpart: Brussels to London/Heathrow, Manchester, Birmingham, Bristol, Edinburgh, Belfast and Nantes. "The extension of our codeshare agreement with Brussels Airlines means that our passengers now have a range of

new routes into Brussels," bmi regional's Chief Commercial Officer Jochen Schnadt commented. "We are delighted to build on our existing collaboration, supporting both the airline and Belgium in accessing new audiences in the UK and beyond." The new agreement is an extension of the codeshare partnership launched by the two airlines on services from Brussels to East Midlands and Newcastle in 2014.

Birthday Blues

SAS Scandinavian Airlines marked its 70th anniversary with smart but typically understated special markings. Boeing 737-86N LN-RGI (c/n 35646) retains the carrier's basic livery, but wears large 'SAS' titles while the blue from the tailfin has been extended down the rear fuselage. KARL NIXON



European Growth for Flybe

FLYBE HAS launched its first intra-European routes from Hannover Airport. The British regional carrier introduced daily services from the German facility to Lyon-Saint-Exupéry in France and Milan/Malpensa in Italy on August 1. Vincent Hodder, Flybe's Chief Revenue Officer commented: "This is a proud milestone for Flybe and we are delighted to be here today. Flybe's debut into this

new marketplace marks the beginning of our ambition to provide mainland Europeans with the same high level of regional connectivity and choice of high frequency time-saving travel as we currently provide throughout the UK." Hannover Airport CEO Raoul Hille added: "The decision of Flybe to expand its offerings at Hannover Airport for us is a great signal to the market."

ECA Returns to the Air

CROATIAN CARRIER European Coastal Airlines (ECA) has resumed operations after briefly suspending services. The Split-based airline was forced to ground its fleet of de Havilland Canada DHC-6 Twin Otters seaplanes on August 13 after the Croatian Civil Aviation Authority (CCAA) temporarily withdrew its Air Operator Certificate. This is understood to have related to issues identified during a safety and maintenance audit the previous week. ECA's Managing Director Klaus Dieter Martin confirmed services had restarted on August 29 but initially with just one of its four aircraft, 9A-TOE (c/n 096), as this was the only example to

have had its paperwork approved by the CCAA. "My team and I have been extremely passionate and optimistic regarding the resumption of our operations," the CEO said in a statement on ECA's website. "However, additional and unforeseen obstacles have slowed down this process drastically." Martin added: "In the meantime, we are working on releasing our Twin Otters 9A-TOA, 9A-TOB and 9A-TOC for operations, but cannot yet foresee when this will occur." The three aircraft remained grounded as *Airliner World* went to press. (Photo Daniel Klein)



Closures at East Midlands

EAST MIDLANDS Airport is set to close for seven consecutive weekends for the resurfacing of its single runway. The project—due to run between November 5 and December 19—will see the facility closed to all traffic on Saturdays and Sundays as construction workers lay 50,000 tonnes of material across 1.6 million sq ft (150,000m²) of runway. Airport Director Andy Cliffe said the timing of the maintenance was planned to avoid disruption over the festive period. "After an in-depth consultation with our airlines and cargo operators, we came to the decision that completing the project in this way was the best way to avoid major disruption in the lead up to Christmas. The timing for us is crucial and we had to look to do this in the winter season, when we naturally aren't as busy." The refurbishment will also see the 9,491ft (2,893m) runway re-equipped with modern LEDs in place of the more than 1,200 lights currently installed.

in brief

Finnair has confirmed it will increase capacity on services to the UK and Ireland under its summer 2017 flying programme. The Helsinki-based flag carrier will employ its new 297-seat Airbus A350 XWBs on morning flights to London, and will increase the frequency of its Dublin service to nine-times weekly. Elsewhere, Finnair is also planning to add new routes to Reykjavik (from April) and Corfu, Menorca and Ibiza (from June).

Brasov-based **Cobrex Trans** has taken delivery of its first airliner. According to *ch-aviation*, the Romanian helicopter operator will use the 148-seat Boeing 737-300—due to be registered YR-CBK—for passenger charters from the northeastern town of Suceava. The company had previously indicated it would serve points in Hungary, Austria, Italy and Belgium as part of a joint venture with local beverage manufacturer Daily Group.

Turkish low-cost carrier **Pegasus Airlines** has reported a strong start to the year. The Istanbul-based operator, which took delivery of the first CFM International LEAP-powered Airbus A320neo in July (see *Airliner World*, September 2016), posted a turnover of \$502m for the first half of 2016, up 5.5% over the same period last year. Passenger traffic between January and July also increased by 8.8% year-on-year to 13.46 million. (Photo Pegasus Airlines)



Gatwick Airport recorded its busiest ever month in July. The London gateway handled 4.6 million passengers during the period, up 6.9% over last year. It attributed the strong performance to its long-haul routes, which grew by a collective 23% year-on-year, while the average load factor was 90%.

Former TNT Airways Managing Director Niky Terzakis is behind a new Belgian low-cost carrier aiming to offer long-haul passenger services. Dubbed **Air Belgium**, the start-up is planning to link Brussels or Liège to destinations in Asia using either Airbus or Boeing widebodies, though Terzakis told *ch-aviation* the carrier was "not planning to launch the first revenue [flight] before the second quarter of 2017".

French premium carrier **OpenSkies** has taken delivery of its first of four widebody jets. The Boeing 767-336ER, F-HILU (c/n 24341), was acquired from parent British Airways (ex G-BNWI) and made its commercial debut on August 28. It joins the Paris/Orly-based airline's existing fleet of three 757-200s.

Another NG for Belavia

BELAVIA HAS received its first direct-delivery 737-800 from Boeing. The aircraft, EW-455PA (c/n 61421), was handed over during a ceremony at the US manufacturer's Seattle delivery centre on August 13, resplendent in the Belarusian national carrier's new livery. It is the first of three examples ordered by the airline on June 26,

2014 in a deal valued at \$272 million. All three will be configured to carry 189 passengers in an all-Economy Class cabin.

Anatoly Gusarov, General Director of Belavia, said the new type will "increase our dispatch reliability and punctuality rate even further." The new 737NG will complement

Belavia's two leased examples and will offer significantly lower operational costs over its existing 737 Classic fleet, which includes eight 737-300s and six -500s. The airline added that the extended range of the -800 will allow for non-stop flights to new destinations including Tenerife and Dubai. (Photo AirTeamImages.com/Yochai)



Zhukovsky Woes Resolved

MOSCOW/ZHUKOVSKY is set to welcome its first commercial services after resolving its certification issues. The facility, also known as Ramenskoye, lies 25 miles (40km) southeast of Moscow and is home to Russia's Gromov Flight Research Institute. It was officially opened to airline traffic on May 30 but was forced to delay the start of regular commercial services after the transport ministry classified it as a standalone regional airport rather than a Moscow hub. As such, it was not included under existing bilateral air service agreements, forcing carriers planning to fly to Zhukovsky to complete additional paperwork (see *Airliner World*, September 2016). The airport has now confirmed its first revenue flights will start on September 12 with the introduction of a daily rotation from Minsk by Belarusian flag carrier Belavia.

The Russian aviation authorities have also awarded traffic rights to three domestic carriers – Yamal Airlines, Ural Airlines and VIM Airlines – to launch flights from Zhukovsky to a host of short- and medium-haul destinations including Austria, Germany, Bulgaria, the Czech Republic and China, as well as to neighbouring former Soviet republics such as Tajikistan, Kyrgyzstan and Kazakhstan.

Ready for Battle

Belavia has repainted Boeing 737-308 EW-254PA (c/n 26294), in a stunning black and orange colour scheme to celebrate its partnership with Belarusian-Cypriot developer Wargaming. The striking livery, which promotes the company's popular multi-player 'World of Tanks' online game, took 13 specialists 1,800 hours to complete and required 300 gallons (1,132 lit) of paint. ASHLEY FRENCH



Auf Wiedersehen Moscow

GERMAN LOW-COST carrier Eurowings has confirmed it will terminate its services to Moscow. The wholly owned Lufthansa subsidiary has flown from Berlin/Tegel to Domodedovo International Airport daily since last October 2015 but will end its links in November citing a lack of demand.

Eurowings is the latest foreign carrier to withdraw services to Russia in the last year following airberlin, Norwegian and easyJet. Others operators, such as Lufthansa, El Al and SAS Scandinavian Airlines, have significantly reduced capacity amid turbulent trading conditions and economic uncertainty in Russia.

VIM Deliveries Continue...

Boeing 767-308ER, EI-DBG (c/n24746), seen at Manchester, UK following repainting into the colours of new operator VIM Airlines. The former Transaero Airlines example is the fifth aircraft to join the Moscow-based carrier since March, with a further seven expected before the end of the year. NIK FRENCH



More Superjets for Aeroflot

RUSSIAN FLAG carrier Aeroflot has concluded a deal to acquire a further ten Sukhoi Superjet 100s (SSJ100). The aircraft, which will be sourced from Sberbank Leasing under 12-year deals, are in addition to the 30 examples the SkyTeam member ordered directly from the manufacturer in 2005, the last of which is due for delivery imminently. Elsewhere, Kazakh carrier SCAT Airlines is yet to firm up its provisional order for 15 SSJ100s. The Shymkent-based operator had been due to convert its outstanding commitment by August 1 under the terms of the memorandum of understanding it signed at the MAKES 2015 airshow in Zhukovskiy. However, Russian news outlet *Gazeta.ru* reports that SCAT has still not agreed terms with the State Transport Leasing Company, which is supplying the aircraft. The airline is yet to comment.

Russia Eyes Indian Tie-Up

RUSSIA HAS offered India the opportunity to establish a local licensed production line for the Ilyushin Il-114-300 turboprop. According to the terms of the deal, brokered under the 'Make in India' programme, the re-launched regional aircraft will be assembled by Hindustan Aeronautics Limited (HAL). Speaking in New Delhi in mid-August, Russia's Deputy Trade Minister Alexander Potapov said: "At India's request we've sent our proposals for launching a joint venture with India's government-run aircraft-building corporation HAL to produce Il-114-300s." The type first flew in 1990 but production was sporadic and just 20 examples had been completed when the final assembly line in Tashkent, Uzbekistan was closed in 2013. The Il-114 was resurrected late last year by Russia's Deputy Prime Minister Dmitry Rogozin, who said that serial production of a much-modernised variant of the aircraft could re-start in Nizhny Novgorod in 2018. The two nations also remain locked in talks over the potential sale of Sukhoi Superjet 100s. Potapov told local press: "Russia and India are conducting proactive negotiations with a number of Indian air carriers over marketing Russia's Superjet 100 airliner." The type is yet to receive certification in India, though Potapov confirmed that validation work is well under way.



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Air Djibouti Returns

CARDIFF AVIATION has delivered the first Boeing 737-400 to Air Djibouti, 9H-VVB (c/n 24901). The St Athan-based firm provides the new African carrier with technical assistance and management, and secured the European-level Air Operator Certificate for Air Djibouti. Cardiff Aviation Chairman, *Iron Maiden* frontman and pilot Bruce Dickinson, delivered the jet personally. Air Djibouti launched regional services

on August 16 and plans to introduce two BAe 146-300s in mid-September and October and a single Boeing 767-200 in December. The widebody will initially operate between Djibouti and London with additional international destinations expected to follow. Djibouti Ports & Free Zones Authority (DPFZA) plans to establish the East African country as a major logistics centre for the region and is building two new airports that are

expected to be operational by 2019. Dickinson said: "The arrival of the first aircraft comes at a particularly exciting time for the region as Djibouti leads in spearheading the growth of aviation in East Africa." Aboubaker Omar Hadi, Chairman of Air Djibouti and Djibouti Ports & Free Zones Authority, said: "Today's flight shows how Djibouti is opening up to become a major global trade and investment hub.

With investment in our port facilities, free trade zones, the upcoming completion of the Addis Ababa-Djibouti railway and the launch of sea/air cargo transportation, Djibouti is completing the multi-modal transport missing link. In doing so, the nation confirms its position as a trade and transport hub. The establishment of a flag carrier is an integral part of the DPFZA's drive to achieve excellence in logistics."



Air Djibouti's maiden Boeing 737-400 9H-VVB (c/n 24901). PHIL WOODS

Tanzania Orders Q400s

THE GOVERNMENT of Tanzania has signed a firm purchase agreement for two Bombardier Q400 turboprops. The aircraft will be fitted with 76 seats and a dual-lavatory configuration and will be used for commercial airline operations. "Our Q400 aircraft will provide affordable, convenient and comfortable air transport solutions," said Dr Leonard Chamuriho, Permanent Secretary, Ministry of Transport, Works and Communication, Tanzania. "We are committed to providing state-of-the-

art service to our passengers and are keen to expand further as our business grows to include new destinations in Tanzania and the African region. "Tanzania is a large country with some challenging airfields, and the Q400 turboprop's capability to operate at these airports, its jet-like speed, long-range cruise capability and outstanding turboprop economics were key factors that guided us in selecting the aircraft for our operations. The level of in-continent support that Bombardier offers is also very important for us."

The deal is valued at \$62m based on list prices. Jean-Paul Boutibou, Vice President, Sales – Middle East and Africa, Bombardier Commercial Aircraft, commented: "This transaction not only solidifies the relationship between the Government of Tanzania, and Bombardier, but also reaffirms Africa as one of the most prolific Q400 aircraft markets. "The Q400 aircraft is a showcase for the continent, where it has proved itself to be extremely efficient as well as cost-effective."

Regional A330 Takes Off

SAUDIA HAS become the first carrier to receive the Airbus A330-300 Regional. The aircraft, HZ-AQ11 (c/n 1724), was handed over on August 18 and is the first of 20 examples the Saudi Arabian flag carrier ordered at the 2015 Paris Air Show. All of the jets will be operated under long-term leases from the International Airfinance Corporation, one of the Middle East's leading lessors. The latest variant of the A330 Family has been optimised for regional and domestic operations and will help to boost capacity on the carrier's most popular routes. The A330 Regional, a lower-weight version of the type – with a MTOW of around 200 tonnes – can carry 400 passengers on shorter-haul flights of up to 2,700nm (5,000km). Airbus said the Regional offers airlines significant cost per seat reductions of around 26% compared with the company's longer-range A330-300 model. Saleh bin Nasser Al-Jasser, Saudia's Director General, enthused: "We are excited to welcome the first A330-300 Regional to our fast-expanding Airbus fleet. It is a step forward in recognising our commitment to a family of aircraft that has contributed immensely to our market growth. The advantage of operating the new regional version of such a popular aircraft, with its proven operational flexibility and lowest cost per seat, means unbeatable economics for our business as well as for our customers."

NIGERIAN OPERATOR Med-View Airline has taken delivery of its first Boeing 747-412. The aircraft, TF-AMV (c/n 28022), has been leased from Air Atlanta Icelandic and will be used on the carrier's flights to London/Gatwick. The aircraft was painted by Air Livery at Manchester, where it was rolled out on July 31. LEE COLLINS



Med-View Goes Supersize



Another 737 for Mauritania Airlines

A FIRM order has been placed by Mauritania Airlines for a single Boeing 737-800, valued at \$96m at current list prices. The jet will be equipped with the manufacturer's Sky Interior, featuring decorative sculpted sidewalls, larger window reveals, LED mood lighting and larger pivot overhead stowage bins.

"The Boeing 737 is the backbone of Mauritania Airlines fleet because of its efficiency and superior operating

economics," said Mohamed Radhy Bennahi, the carrier's CEO. "The addition of this new 737-800 will greatly expand our network and enhance the overall travel experience of our passengers."

Mauritania Airlines is based at Nouakchott-Oumtounsy International Airport in the African nation's capital city. It serves routes in Africa and Europe and already has a 737-700 and two -500s in its fleet.

Van Rex Gallard, Vice President of Sales for Africa, Latin America and the Caribbean, Boeing Commercial Airplanes, commented: "Mauritania Airlines has been an important player in West African aviation for several years. Today's order for one additional 737-800 underlines Mauritania Airlines' position as a leading carrier committed to providing its passengers with a growing choice of destinations and exceptional in-flight comfort."

RwandAir Widebody



THE FIRST Airbus A330-243 for RwandAir has been test flown at Toulouse as F-WWKS (c/n 1741, to become 9XR-WN). The carrier is also set to receive an A330-300 shortly. EUROSPOT

in brief

Emirates has confirmed plans to upgrade its Manchester route to an all-Airbus A380 service from next year. The Dubai-based carrier will switch the last of its thrice-daily links from a Boeing 777-300ER on January 1, increasing capacity to the British airport by 11% and adding 2,198 extra seats per week.

The carrier has also launched a new daily service from Dubai to Yangon in Myanmar, and onwards to Hanoi in Vietnam, operated by a Boeing 777-300ER. (Photo Emirates)



Oman Air has launched a new free coach service between Al Ain and airports in Abu Dhabi and Dubai. The service will enable customers to easily access the airline's international network by selecting Al Ain as their origin or destination while booking their tickets. The services will run double-daily between Al Ain and Dubai, and Al Ain and Abu Dhabi, with a single journey time of approximately two hours.

Royal Jordanian has launched a new in-flight, duty-free service across the majority of its network. The service is provided in partnership with DFASS Group and offers passengers a number of top brands in fragrances and cosmetics, watches, jewellery, tobacco and sunglasses.

Qatar Airways and **Vueling Airlines** have entered into a codeshare agreement. The new partnership will enable passengers to connect via the airlines' common gateways of Barcelona/El Prat and Rome/Fiumicino. Qatar Airways operates double-daily flights between both cities and its Hamad International Airport hub in Doha, linking Vueling Airlines' European services to its global network.

Burkina Faso-based start-up **Colombe Airlines** has taken delivery of an ATR 72-202 (c/n 373) formerly with FitsAir of Sri Lanka. The lease purchase of the aircraft has been organised by AELIS Group, making it the third new ATR operator that the firm has served this year. The turboprop will be based in Ouagadougou to serve the domestic and regional market on regular scheduled services.

Nigerian carrier **AeroContractors** temporarily suspended scheduled services with immediate effect on September 1. "This business decision is as a result of the current economic situation in the country, which has forced some other airlines to suspend operations or outrightly pull out of Nigeria," the carrier's CEO, Fola Akinkuotu, was quoted as saying by the news website *Vanguard*. "In the case of Aero, the airline has faced grave challenges in the past six months, which impacted its business and by extension the scheduled services operations," he said.

First NEO for LATAM

Airbus has handed over LATAM Airlines Group's first A320neo. The carrier is the first in the Americas to operate the neo, which is powered by Pratt & Whitney Pure Power PW1100-JM engines. Executives from LATAM and Airbus attended a handover ceremony at the manufacturer's facility in Toulouse, France, where the carrier also took delivery of its fourth A350 XWB. Both jets are painted in LATAM's new livery. LATAM will debut the 174-seat neo on domestic services before expanding to

regional routes in November. The airline has 67 A320neo Family aircraft on order. "We are pleased to offer our passengers the opportunity to fly the first A320neo in the Americas," said Enrique Cueto, CEO of LATAM Airlines Group. "The A320 aircraft family has long served an important role in our fleet, supporting the operation of our unrivalled domestic and regional network in Latin America. With the latest in technology, efficiency and passenger comfort, the A320neo is a welcome addition and will help us to

continue to offer one of the most modern and efficient fleets in the industry." Airbus President and CEO, Fabrice Brégier commented: "Over the years, Airbus and LATAM have grown together to become partners in building today's dynamic aviation market in Latin America, which is why we are especially proud that the first A320neo in the Americas will be flying in LATAM's livery. We are certain that this aircraft will complement their existing fleet and further their success in the region."

Airbus and LATAM executives pose in front of the carrier's first A320neo and fourth A350 XWB during the handover ceremony at Toulouse. AIRBUS



Kirby Switches from American to United



United Airlines' new President Scott Kirby. UNITED AIRLINES

Scott Kirby has been named president of United Airlines. This is a newly created role at the airline and will see Kirby assume responsibility for United's operations, marketing, sales, alliances, network planning and revenue management. Kirby's appointment is effective immediately and he will report to United CEO Oscar Munoz. "Scott is a proven leader, whose deep airline experience and expertise will further accelerate our efforts to build the best airline in the industry," said Munoz. "Scott's appointment, along with other recent leadership announcements, is the culmination of the formation of my senior leadership team. This is just the latest step in our mission to be an agile and innovative industry leader." Kirby was previously president of American Airlines where he has been replaced by Chief Operating Officer Robert Isom. "Robert is a world-class executive, and extremely well-qualified to assume the role of president," said American Airlines Chairman and CEO Doug Parker. "He has played an important role in the success American has become, including leading our operational integration and building an outstanding team. Robert is an engaging leader with a talent for growing and inspiring the colleagues around him. As president of American Airlines, Robert will do great things for our team members, our customers and our shareholders." Parker paid tribute to Kirby saying: "Scott has been a key member of our team for over 20 years. We would not be where we are today without his leadership."

Allegiant Makes Airbus Order



Allegiant has placed an order for 12 Airbus A320neos. AIRBUS

Las Vegas-based budget carrier Allegiant Travel Company has signed a firm purchase contract for 12 Airbus A320neos. The deal is the first time Allegiant has purchased new aircraft direct from a manufacturer. "Allegiant offers travellers convenient, affordable nonstop service enabling them to more easily enjoy their favourite vacation destinations," said Maury Gallagher, Chairman and CEO of Allegiant Travel Company. "As we continue to transition to an all-Airbus fleet,

this purchase will enable us to accelerate that process, reduce complexity in our fleet and provide our passengers with an ever-improving experience." The new jets, which will be powered by CFM International's CFM56 engines, will join Allegiant's current fleet of 15 A319neos and 16 A320neos. John Leahy, Airbus Chief Operating Officer – Customers, said: "We love it when we hear the Allegiant team say that 'Airbus is our future', because that demonstrates they are hitting their

bottom-line goals while also satisfying their passengers, and they know it's because of the Airbus A320 Family. The A320 offers wider and more comfortable 18in seats, wider aisles for faster boarding and more onboard storage space for today's larger carry-ons. Low-cost carriers come back to the A320 Family again and again because it offers optimum performance from all perspectives. When an airline grows its A320 fleet, it's making a sound investment in its financial future."

Alaska Launches Space Bin Retrofit Programme

Alaska Airlines will be the launch customer for Boeing's Space Bin retrofit programme. Boeing says its new overhead bins, which will be installed on 34 of the carrier's 737-900ER fleet, increase the room for carry-on baggage by up to 50%, "depending on the airline's configuration". The design enables six bags to be stowed in each compartment, two more than the current pivot bins installed on Next-Generation 737s with the Boeing Sky Interior. The manufacturer says these figures are based on a standard size carry-on bag measuring 9in x 14in x 22in (23cm

x 36cm x 56cm). The bottom edge of a Space Bin hangs about 2in (5cm) lower, so passengers can lift their baggage more easily. "Alaska is committed to making flying hassle-free and comfortable," said Mark Eliassen, Treasurer and Vice President of Finance, Alaska Airlines. "Many passengers want to keep a bag in the cabin and Boeing's Space Bins make it possible for virtually everyone to stow a wheeled suitcase. That's why Alaska is thrilled to be equipping 100% of our new jets with Space Bins and retrofitting all of our existing 737-900ERs."

Alaska Airlines was the launch customer for Boeing's in-production Space Bins programme last year and by 2017, will have installed the upgrade to almost half of its fleet. Mike Fleming, Vice President, Boeing Fleet Services, added: "Boeing works very closely with our customers to enhance their airplanes with features that improve the passenger experience. By providing our customers with a retrofit option for the Space Bins, we are allowing long-time 737 customers, such as Alaska Airlines, the ability to keep their entire fleet current."

in brief

Delta Air Lines was forced to cancel around 1,000 flights on August 8 after an outage during the early hours crippled its computer systems. A further 775 flights were axed the following day before operations returned to normal late on August 10.

United Airlines has reached the one millionth passenger mark on its service between Newark/Liberty International Airport and Hamburg Airport. The route was inaugurated on June 10, 2005 and has clocked up 7,122 flights. The one millionth passenger was Annemarie Kotte of Hamburg. (Photo Hamburg Airport)



The Los Angeles City Council has approved **Delta Air Lines'** lease and license agreement to enable the carrier's relocation to Terminals 2 and 3 at Los Angeles International Airport (LAX). The Atlanta-based airline plans to invest \$1.9bn upgrading the facility.

Amazonas Uruguay has received its Air Operator Licence from the Uruguayan Aviation Administration, paving the way for the carrier to launch operations. The airline is expected to begin flights to Aeroparque Jorge Newbery in Buenos Aires, Argentina, and Silvio Pettirossi International Airport in Luque, Paraguay, from Montevideo on October 5, using its sole Bombardier CRJ200. **Rafael A Reza**

Mexico's **Volaris** will begin a year-round nonstop service from Monterrey to Denver International Airport on December 1. The new link will operate on Tuesdays and Thursdays using a 179-seat Airbus A320. The flight is scheduled to depart Monterrey at 1007hrs, arriving in Denver at 1215hrs. The return departs Denver at 1330hrs arriving back in Mexico at 1725hrs.

Airbus Helicopters has delivered the first H175 helicopter to be operated in the Americas to **Transportes Aéreos Pegaso** for oil and gas operations in the Gulf of Mexico. A second example is scheduled for delivery next year. "We have many years of experience with Airbus Helicopters and we are very proud to be among the first to operate this new helicopter, which has become the industry's benchmark medium-sized twin-engine rotorcraft," explained Pegaso CEO Enrique Zepeda Navarro.

Bombardier Business Aircraft has delivered the first Challenger 650 business jet to be registered and operated in Mexico, XA-GRE (c/n 6063). "The Challenger 650 jet is an ideal aircraft to be operated from high-altitude airports, such as Toluca near Mexico City," said Stéphane Leroy, Regional Vice President, Latin America, Bombardier Business Aircraft.

Prime Takes to the Skies



Online retail giant Amazon has launched Prime Air with a Boeing 767-330ER(BDSF), N1997A (ex N648GT, c/n 27310) operated by Atlas Air. Amazon expects to expand the fleet to 40 aircraft and says operating its own jets will give it more control over the delivery process. The maiden aircraft has been named Amazon One, and went into service at the beginning of August. **JOE G WALKER**

JetBlue Heads to Cuba

JetBlue Airways became the first US airline in 50 years to operate a commercial flight between the US and Cuba when it launched operations from Fort Lauderdale-Hollywood International Airport to Abel Santamaría Airport in Santa Clara on August 31. Flight 387 touched down on the

island with Robin Hayes, the carrier's President and CEO, government officials from both nations, and dignitaries among those on board the maiden service. Hayes said: "We are proud to be the first US airline to serve Cuba, but our focus is on being the best airline serving Cuba."

JetBlue will begin flights from Fort Lauderdale to Camagüey on November 3, and Holguín on November 10, subject to government authority. Pending approval, it will serve Havana with daily flights from the Floridian airport as well as New York/JFK and Orlando. (Photo PR Business Wire)



PIA Leases SriLankan A330s

PAKISTAN INTERNATIONAL Airlines (PIA) has confirmed it has signed a wet-lease agreement with SriLankan Airlines for three of the latter's Airbus A330-300s. The Pakistani national carrier has been looking for additional widebody aircraft to operate its new premier six times weekly services – three

rotations each from Islamabad and Lahore – to London/Heathrow, which were launched on August 14. SriLankan Airlines originally proposed leasing four of its seven Airbus A330-300s to PIA, and a high-level team from Pakistan, led by CEO Bernd Hildenbrand, recently visited Colombo to inspect the aircraft and negotiate a contract. The first aircraft,

4R-ALN (c/n 1604), was delivered to PIA on August 6, with the other two expected to follow soon.

SriLankan Airlines is looking to offload the jets after the Government of Sri Lanka said it would no longer fund continuing losses. As a result, the carrier has ended its operations to Europe, bar its daily Colombo-London link, leaving it

with spare capacity.

The Pakistani carrier has also revealed that five of its 11 Boeing 777s will be reconfigured with new Business and Economy Class cabins, featuring the latest inflight entertainment system. It says the first reconfigured aircraft should be returned to service in February. (Photo Richard Vandervord)



Hainan Completes Azul Investment

THE HNA Group, parent of Hainan Airlines, has become the single largest shareholder in Azul Linhas Aéreas Brasileiras after paying \$450m for a 23.7% stake in the Brazilian carrier.

Part of the deal will see three new members appointed to the board and Hainan says the investment paves the way for co-operation between the two carriers including developing a global network, code sharing, new route development, a frequent flyer programme and other strategic initiatives.

Adam Tan, Vice Chairman of the Board of Directors and CEO of HNA Group, said:

"In addition to bringing more choice and convenience to Hainan Airlines' customers travelling to and from Brazil, we view Azul as a strong and lasting partner for HNA to explore further expansion and capital investment in Latin America." David Neeleman, founder and CEO of Azul, said: "This \$450m investment demonstrates we have a winning business model and that Hainan Airlines, as a large investor, has absolute confidence in Azul's team. We are pleased to have Hainan as a partner as we strive to expand our award-winning services throughout the region."

Cebu Pacific Adds More A330s

AIRBUS HAS won a firm order from Cebu Pacific for two more A330-300s. The Manila-based carrier currently operates a fleet of six A330s on long-haul flights to the Middle East and Australia, as well as on domestic and regional routes.

"The A330 has proven to be the right

choice for our long-haul low-fare product," said Lance Gokongwei, Cebu Pacific President and Chief Executive Officer. "The newly ordered aircraft will enable us to add more routes, including the launch of our first flights to the US. We are excited to be expanding our widebody fleet."

Malaysia Goes MAX

MALAYSIA AIRLINES has been revealed as the customer for a previously unidentified order for 25 Boeing 737 MAX 8s. The deal, valued at \$2.75bn, also includes 25 purchase rights for either MAX 8 or MAX 9 airframes.

"This deal is a game changer for us, offering much lower costs and greater efficiency," claimed Malaysia Airlines' new Chief Executive Officer Peter Bellew. "With the 737 MAX's longer range capabilities we will be able to connect

our passengers to more destinations, in greater comfort and with superior economics. Malaysia Airlines is now on a path to growth across the Asean region," said Bellew. "This new aircraft order will set the stage for our continued recovery and success into the next decade." The carrier has operated almost every variant of the 737 family since it took delivery of its first -200 Classic in July 1972 and received its 100th example of the type in December 2014.



SpiceJet Leases Pair of 737-800s

LOS ANGELES-BASED Air Lease Corporation (ALC) has placed two Boeing 737-800s on long-term lease with SpiceJet.

The first aircraft had been delivered to airberlin as D-ABMK (c/n 37772), in November 2012 and was withdrawn from service three years later. After repainting it was handed over to the Indian carrier on July 30, becoming VT-SZM. The second example, is a new-build jet, which was built for Far Eastern Air Transport (FAT) as B-28066 (c/n 41345), but was not delivered. Instead the aircraft was re-registered N373AL and flown to Norwich, UK (still in its FAT colours) where it was repainted by Air Livery

in SpiceJet's colour scheme. It was flown to the Indian carrier's Delhi base on August 9/10 where it became VT-SZN. These are the fourth and fifth examples ALC has placed with SpiceJet. Kiran Koteswar, SpiceJet's CFO, commented: "We value our partnership with ALC and with these new 737-800 placements we are further strengthening our long-term association. We are now embarking on increasing our fleet, which will be instrumental in our post turnaround growth story. With these additional Boeing aircraft, we aim to build up our network and offer more services." (Photos Matt Varley)





ANA Celebrates 50th Dreamliner Delivery

All Nippon Airways (ANA) has welcomed the 50th Boeing 787 into its fleet. In a ceremony held at Boeing's Everett Delivery Center on August 17, the US manufacturer handed over the milestone aircraft, a 787-9, JA882A (c/n 43872), to the Japanese carrier. Osamu Shinobe, President and CEO, ANA said: "The 787 has played a significant role in opening up routes into new markets, while also forming the backbone of our long-haul fleet. As the launch customer for the Dreamliner family, we are proud to welcome the 50th aircraft into

our fleet, where it will continue to serve our passengers with the most innovative and memorable flying experience." The airline became the 787 launch customer in 2004 when it purchased 50 aircraft and, seven years later, was the first to take delivery of the revolutionary aircraft. ANA's current fleet consists of 36 787-8s and 14 -9s, as well as having an additional 33 examples still on order, including three of the newest and longest member of the Dreamliner family, the 787-10. (Photo Boeing)

Jet Airways Delays its Dreamliners

India's second largest airline Jet Airways is deferring delivery of its new Boeing 787 Dreamliner fleet. It originally placed an order for ten 787-8s on December 29, 2006 in a contract valued at \$2.6bn, but later converted all to the larger -9 variant which has 280nm (520km) extra range and carries 48 additional passengers (in a typical two-class configuration). The carrier was expecting to receive its first example in the last quarter of next year, however, despite no official word on when deliveries will now take place, they could be pushed back to 2019. Jet Airways told India's *Business Standard* newspaper that it is continuously reviewing its network and fleet strategies and is currently upgrading its capacity on some international routes by deploying six 777-300ERs that are returning from lease with strategic partner Etihad Airways. The introduction of additional widebody aircraft is currently being reviewed.

in brief

Air New Zealand plans to spend NZ\$100m on increasing the number of premium seats on its Boeing 787-9s and 777-300ER fleets. Three Dreamliners being delivered from October 2017 will have the new configuration with Business Premier seats increasing from 18 to 27, while Premium Economy seats rise from 21 to 33. All seven 777s will progressively undergo a cabin refurbishment programme to install the carrier's latest Business Premier and Economy seats.

China Eastern Airlines is set to become the first paperless carrier operating in China. It has received authorisation from the Civil Aviation Administration of China to fly in a fully digital capacity, using Jeppesen's FliteDeck Pro as part of its electronic flight bag solution.

Newcastle-based Moon Jet Group has been selected to remarket two Airbus A330-300s on behalf of **TransAsia Airways**. The aircraft, B-22101 (c/n 1857) and B-22103 (c/n 1146), were both manufactured in 2012. The airline's other two A330-300s are due to be handed back to lessor Lease Corporation International. The sale and return of its widebodies is part of a cost-cutting exercise resulting from strict measures imposed on the airline in the wake of two ATR 72 crashes in 2014/15.

Royal Bhutan Helicopter Services took delivery of its second Airbus Helicopters H130 on July 13. The aircraft, A5-BHS (c/n 8232), joins its sister-ship A5-BHT (c/n 8160) which entered service in October last year. Both helicopters are fitted-out with additional equipment including an integrated tracking systems, cargo sling, bambi bucket for firefighting and an onboard stretcher enabling medical evacuations to be undertaken. (Photo Royal Bhutan Helicopter Services)

A New Life for Saab 340



Nine months after starting services, Kiwi Regional Airlines' operations have been wound up. The carrier's single Saab 340, ZK-KRA (c/n 065), has been acquired by Air Chathams with most staff transferred to the Te One, Chatham Islands-based carrier. GRAHAM WEATHERBY

Shandong Logojet

Making a technical stop in Honolulu, Hawaii during its long delivery flight is the latest Boeing 737-85N, B-7977 (c/n 61429), for Shandong Airlines. The jet wears a special livery to promote the Shandong Province of China where the carrier is based. IVAN NASHIMURA



Qantas has invested Au\$23m in new training equipment as it prepares for the arrival of the first of eight Boeing 787-9s at the end of next year. This latest investment includes a new flight simulator, complementing the unit already in use with low-cost subsidiary Jetstar Airways in Melbourne, as well as other training equipment which will be installed at its flight training centre at Mascot, Sydney.

The **South Australian Government** has reached a deal with **China Southern Airlines** for the launch of the first direct flights between the Chinese mainland and Adelaide. Initially, China Southern will operate three flights per week between Adelaide and Guangzhou using Airbus A330s in a four-class configuration. The government said it hopes services could start as early as December.

Avro RJ Freighter on the Horizon?

BAE SYSTEMS Regional Aircraft is considering launching a passenger-to-freighter conversion programme for its Avro RJ jetliner. The British company said it is currently discussing the project with likely customers to assess market potential. It has spent the last year evaluating the suitability of the Avro RJ as a freighter and now has a fully developed specification, which is being offered to the market. According to BAE Systems, the Avro RJ Freighter will carry up to 14 tonnes of cargo and fills the gap between the seven-tonne freight capacity of current large turboprops and the 18 tonnes of the bigger Boeing 737 Classic conversions. The company estimated the cost of converting a 737 to be around \$5m, but anticipates an adapted RJ100 freighter to be significantly cheaper.

It plans to use the same freight door as fitted to the 146QT, but will fit an upgraded actuation system to improve performance. It is also investigating adding a modular underfloor fuel tank that offers customers up to 1,000nm (1,852km) more range. The RJ100 conversion is being offered first, although the company said the smaller RJ85 could also be upgraded using identical components. BAE Systems is expecting to formally launch the programme in November and has suggested the first conversion could be completed by the end of next year. It anticipates typical lead time from contract signature to be between 9-12 months, with conver-

sions taking a further three months, subject to the specific modifications required. It added that the development of a combi variant could follow should there be sufficient interest. (Photo BAE Systems Regional Aircraft)



Bombardier Losses

BOMBARDIER HAS recorded second quarter revenues of \$4.3bn, down 6.7% over the same period last year. However, within these figures the Canadian manufacturer has revealed a \$492m loss for what it calls "onerous contracts provisions" [heavy discounts] to cover firm orders for 127 C Series aircraft from Air Canada, Delta Air Lines and airBaltic. Alain Bellemare, Bombardier's CEO commented: "The discounted orders have created value and generated momentum for the C Series and has been fully accounted for in Bombardier's relaunch of the aircraft. Despite these financial adjustments, the C Series production ramp-up is on track and the financial results show the company is making solid progress on its turnaround plan." He went on to say that between 12 and 15 aircraft are planned for delivery this year, including the first CS300 for airBaltic. Bombardier is expecting to increase production next year to between 30 and 40 aircraft and the company is on track to achieve break-even cash flow on the programme by 2020 as planned.

Viking Milestone

VIKING AIR has completed the 100th production Twin Otter Series 400. The aircraft, C-FMJ0 (c/n 944), is now in the final stages of being fitted out before it is delivered to sister company Pacific Sky Aviation where it will be used as a factory demonstrator. David Curtis, Viking's President and CEO enthused: "When I take a moment to reflect on the Series 400 programme from the original launch to completion of our 100th aircraft, and all the challenges we have overcome in between, I am truly amazed at what the Viking team has accomplished. While there was

doubt that a relatively unknown aerospace manufacturing company on the west coast of Canada would be up to the task, well here we are, 100 production aircraft later." The Twin Otter 400 represents a significant upgrade over the legacy DHC-6-300, featuring upgraded Pratt & Whitney PT6A-34 engines and a Honeywell Primus Apex digital avionics suite along with around 800 other modifications and changes. To date, Viking has delivered Series 400s to 34 customers in 29 countries around the world. (Photo Viking Air).



Heading?

Viking employees install commemorative signed ribs into the wings of Viking's 100th production Twin Otter Series 400 aircraft at the company's production facility in Victoria, British Columbia, Canada. Viking Air

Boeing Deliveries



One of two Boeing 737-932ERs, N861DN (c/n 31973), delivered to Delta Air Lines during July taxies to the flight line ramp at Boeing Field on June 28. JOE G WALKER

Boeing delivered the following aircraft in July:

737-800	29	9 Air, Air Europa, Air Lease Corp, American Airlines (2), Avia Capital Leasing, BOC Aviation, China Eastern Airlines, flydubai, GECAS, Goiânia (Ukraine International Airlines), Hainan Airlines, Hebei Airlines, ICBC Leasing (2), Japan Transocean Air, Okay Airways, Oman Air, Shandong Airlines (2), Shenzhen Airlines, Southwest Airlines (3), Turkish Airlines (2), Virgin Australia Airlines, Xiamen Airlines (2)
737-800A	2	United States Navy (2)
737-800C	1	United States Navy
737-900ER	4	Alaska Airlines, Delta Air Lines (2), Lion Air
747-8F	1	AirBridgeCargo
767-300F	1	FedEx
777-300ER	5	China Southern Airlines, Emirates (2), GECAS, Swiss International Air Lines
787-8	3	Ethiopian Airlines, Qatar Airways, Royal Air Maroc
787-9	11	Air China, Air New Zealand, All Nippon Airways (2), British Airways (2), Etihad Airways (2), Hainan Airlines (2), MG Aviation
Total	57	

Dreamliner Engine Issues

ALL NIPPON Airways (ANA) has discovered an issue with fan blades in its Rolls-Royce Trent 1000 engines. Earlier this year two aircraft had to return to their departure airports after experiencing engine-related irregularities. The Japanese carrier, together with Rolls-Royce, has determined the problem to be fatigue cracks in the blades of the engine's intermediate pressure turbine. These are caused by sulfidation – corrosion by chemical components in the atmosphere – with the propagation of these cracks correlating with the number of flight cycles of that engine. ANA has implemented a programme to determine when such cracks are likely to occur and has been systematically replacing engines before the number of flight cycles is reached. Aircraft on domestic rotations fly through lower concentrations of the chemical components in question, and were originally not subject to systematic engine replacement. However, a third incident on August 20 on a flight from Haneda to Miyazaki prompted ANA to replace engines used on domestic flights too. This caused a temporary reduction in available aircraft and led to a host of flight cancellations. ANA stated it will fit brand new or minimally used turbine blades of the type currently in use until it can fit engines equipped with improved corrosion-resistant turbine blades as a permanent solution.

Airbus Deliveries



Lufthansa took delivery of its fourth Pratt & Whitney PW1100G-JM powered Airbus A320neo, D-AIND (c/n 7078), on July 28. The German airline group has a total of 116 A320neo and A321neo aircraft on order from the European manufacturer. AIRTEAMIMAGES.COM/JAN SEVERIJNS

Airbus delivered the following aircraft in July:

A320ceo	15	Avolon (airberlin), Loong Air, easyJet (3), CALC (Jetstar Pacific), Lufthansa (Eurowings), Air Arabia, Qingdao Airlines, Aerospace Trading Holding (Aeroflot), Lion Air (Batik Air), Shenzhen Airlines, ICBC Leasing (Interjet), Tibet Airlines, Spring Airlines
A320neo	3	IndiGo, Pegasus Airlines, Lufthansa
A321ceo	18	TransAsia Airways, Frontier Airlines, Vueling Airlines, China Southern Airlines (3), Delta Air Lines (2), Wizz Air, China Eastern Airlines (2), SMBC Aviation Capital (Capital Airlines), JetBlue Airways, Sichuan Airlines, Turkish Airlines, VietJet Air, Air China, American Airlines
A330-200	2	Airbus Defence & Space, Iberia
A350-900	3	Qatar Airways, AerCap (Cathay Pacific), Singapore Airlines
Total	41	

Next-Generation Passenger Experience

AIRBUS HELICOPTERS has completed the validation of the H160's aeromechanical configuration, a key milestone in the next-generation, twin-engine helicopter's design and performance. The manufacturer has completed more than 200 hours of flight-testing and with the medium utility aircraft's flight envelope now fully open it is confident its next-generation helicopter will set new standards of flight experience for passengers and crew.

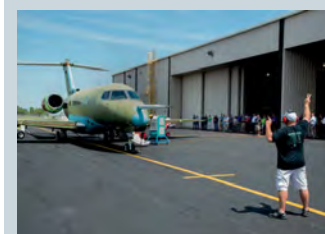
The company reported that the H160 demonstrated exceptionally low vibration levels along with remarkable aircraft stability levels during the ongoing flight-test programme. A third prototype will join the flight-test programme next year to support the certification process ahead of the H160's entry into service in 2018. (Photo Airbus Helicopters/Anthony Pecchi)

in brief

The third **Embraer E190-E2** prototype made its maiden flight from the Brazilian manufacturer's São José dos Campos facility on August 27. The company said the jet will be used primarily to "test flying qualities and evaluate how the aircraft handles in icing conditions". The first two E190-E2 prototypes have accumulated 150 hours of test flying to date. A fourth example will join the fleet early next year and Embraer said the programme remains on track for service entry in the first half of 2018.

Rolls-Royce has won two contracts for its Trent 700 engines. The first is a \$1.5bn deal to supply engines to China Eastern Airlines to power 15 Airbus A330s the carrier has on order. These are in addition to the 51 Trent 700-powered aircraft already operated by the airline. It has also won an order from Cebu Pacific for engines for two new A330s. The Trent 700 has won more than 70% of new orders over the past four years compared with its rivals, General Electric's CF6 and Pratt & Whitney's PW4000.

Cessna Aircraft has completed initial ground engine tests on its Citation Longitude's Honeywell HTF7700L turbofan engines, paving the way for the first flight of the prototype aircraft. These tests verified the functionality of the engine start, fuel systems and auto-throttle as well as interfaces with the avionics electrical and hydraulic systems. (Photo Cessna Aircraft)



Airbus has opened a new acoustic laboratory in Hamburg enabling it to investigate cabin noise and vibrations for the first time. The Centre for Applied Aeronautical Research (ZAL) has a 28ft (8.5m) fuselage demonstrator that can be subjected to sound waves around its full circumference via a system of 128 individually controlled speakers replicating engine noise from existing powerplants and that expected from future propulsion concepts. The company said the lab accurately reproduces conditions that apply in flight, which is a real breakthrough in noise testing. This previously was evaluated by studying isolated components or using expensive flight testing.

Engine Alliance is adding two additional engine overhaul centres to its GP7200 MRO network. The facilities at Emirates' Engine Maintenance Centre in Dubai and Pratt & Whitney Eagle Services Asia in Singapore will add more capacity to accommodate the growing fleet of GP7200 engines. Engine Alliance's latest investments add important overhaul capacity to the facilities already in place at GE Aviation Wales and Air France industries.





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A Caribbean Odyssey

With turquoise waters, pristine, palm tree-lined beaches and ever present sunshine, the Caribbean is a dream destination for tourists. For aviation enthusiasts, the region holds a very different appeal – it is home to an increasingly rare array of classic aircraft types.

Sadly, it's not all glitz and glamour. My first stop was Venezuela, a country whose increasing political and economic instability had made it a regular feature in newspapers around the world. This situation has been aggravated by the falling oil price that has driven the nation into poverty. This is perhaps most visible in the capital Caracas where supermarkets are empty – bereft of even the most basic goods and groceries – corruption is rife and crime continues to escalate.

Venezuela is rapidly emerging as one

of the most dangerous places anywhere on the globe, leading a host of international carriers to withdraw their services to the South American nation. This includes Lufthansa, which axed its links in June after almost 45 years of continuous operation. As a result, travelling to Venezuela is now anything but ordinary and needs to be well planned. It is certainly not encouraged – guidelines issued by the German Federal Foreign Office contain a strong recommendation not to leave the hotel, even during daylight hours, along with warnings against the severe threat of armed assaults, robbery and kidnapping.

Getting There is the Most Difficult Part

The tiny remote archipelago of Los Roques, a federal dependency of Venezuela, is a very notable exception. The idyllic islands lie in the Caribbean

Sea around 95 miles (150km) off the coast and, with their pristine coral reef and breathtaking scenery, are a popular playground for the rich and famous, providing a stark contrast to the woes of the mainland.

The only way of reaching Los Roques is to fly in via Caracas and this presents its own problems. Official guidance warns against travel to Venezuela but, with most services departing early in the morning, an overnight stay in the capital is invariably required. The most difficult part of any visit to the archipelago is actually getting there.

Fortunately, I tracked down a reliable guide who agreed to arrange my flights to and from Los Roques in exchange for three very rare and valuable commodities – cooking oil, detergent and toothpaste.

A good local contact in Venezuela is essential, even when buying

A postcard from Los Roques: LTA's ATR 42-320, YV2757 (c/n 206), making its final approach to the archipelago during a spectacular sunset.
ALL PHOTOS AUTHOR

Bernd Sturm travelled to Venezuela and Cuba in search of the last remaining flying rarities in scheduled airline service.





tickets for domestic services such as this. Exorbitant inflation of the local currency has created a booming black market where the exchange rate can be as much as 20 times greater than the legal rate. Officially, one US dollar will buy you seven bolívars, making the cost of a burger at a food stall the equivalent of \$50, a night in a basic hotel around \$700 and my return flight to Los Roques an eye-watering \$2,400. By comparison, \$1 can buy up to 180 in the black market...

ABOVE • *Turquoise waters, pristine, palm tree-lined beaches and ever present sunshine make Los Roques a must-visit location.*

ABOVE RIGHT • *Sandy paths and colourful buildings add to Los Roques's tranquil charm.*

I was still taking a very big risk, essentially heading to Caracas to meet a stranger to whom I would deliver cash and groceries in exchange for safe passage to Los Roques. It was a rather tense situation but everything worked out as planned and I was picked up at Simón Bolívar International Airport and driven to a nearby hotel. I was promptly collected again early the following morning to catch my flight to the archipelago. Immediately obvious during my drive back to the airport were

the vast queues outside supermarkets, often a couple of hundred yards long. Local residents line up hours before the stores open with the hope of obtaining a ration of whatever happens to be on sale that particular day, but most of the shops remain empty and there is simply nothing left to buy.

A Caribbean Paradise

Los Roques could not be any more different from the mainland. In place of crime, struggle and strife there is >>



Fortunately, I tracked down a reliable guide who agreed to arrange my flights to and from Los Roques in exchange for three very rare and valuable commodities – cooking oil, detergent and toothpaste.



total tranquillity. Its 350 islands, cays and islets span around 15.5sq miles (40.5km²) and are home to just 1,500 residents. As a result, most people on the archipelago are visitors but because of the situation in nearby Venezuela, I was one of just a few international tourists in what is a genuine paradise.

While I couldn't help but be impressed by Los Roques' beauty, the whole point of my visit was to sample some unusual aircraft types.

My local contact had secured me a ticket on *Línea Turística Aereotuy* (LTA) flight LT 104. Somewhat disconcertingly, the departure board at Caracas is rather outdated and

RIGHT • *Línea Turística Aereotuy's sole Dash 7 features a single row of rear-facing seats at the front of the cabin.*

BELOW RIGHT • *The departure board at Caracas is rather outdated and displayed the service to Los Roques as being operated by former German leisure carrier LTU International.*

BELOW • *The turquoise waters of the Caribbean Sea, framed by two of the Dash 7's four Pratt & Whitney Canada PT6 engines.*



LLEGADAS NACIONALES DOMESTIC ARRIVALS			
HORA TIME	AEROLINEA AIRLINE	VUELO FLIGHT	VUELO FLIGHT
07:20		5R 1317	PTO ORDAZ
07:26		VO 2001	PORLAMAR
07:45		LT 102	LOS ROQUES
08:05		9V 1022	PORLAMAR
08:15		OC 780	PORLAMAR
09:00		OC 742	PTO ORDAZ
09:00		OC 752	MARACAIBO
09:10		OC 712	BARQUISIMETO

displayed the service as being operated by former German leisure carrier LTU International (which previously flew under the LT IATA code). This is most likely a hangover from when the airline was a regular visitor to the Venezuelan capital many years ago.

Fortunately for me, while LTU ceased flying in 2009, LTA is very much alive and well and it was on its last remaining de Havilland Canada Dash 7-102 that I would make the short hop across to Los Roques.

The aircraft, YV-1184 (c/n 30), was built in 1980 and served with Canadian regional carrier Time Air until 1991 when it was transferred to Fort Lauderdale and flew exclusively to Paradise Island in the Bahamas with Paradise Airlines. It was incorporated into the LTA fleet in 1996 and, today, is the sole example of its type in scheduled service after Air Greenland and Berjaya Air withdrew their final Dash 7s in 2015.

A Little St Maarten

For aviation enthusiasts, much of Los Roques' appeal comes from its spectacular airfield. It is reminiscent of the famous St Maarten, but here the only thing separating the runway from the sea is a yard or so of beach. Furthermore, it is just 2,600ft (800m) long, making for spectacular approaches as pilots aim to land as early as possible on the short, paved strip. This poses no problem for the Dash 7 with its remarkable short take-off and landing (STOL) characteristics, though the same can't be said for the ATR 42-300 the carrier must use on the route when its sole Dash 7 is down for maintenance.



Chapi Air's Britten-Norman BN-2A Islander YV2238 (c/n 296), was damaged in a landing accident the day before the author's visit.

LEFT AND ABOVE LEFT • Los Roques is frequented by a host of aircraft types including Cessna 208B Grand Caravans of Venezuelan flag carrier Conviaza and this anonymous-looking Let L-410UVP Turbolet, YV2358 (c/n 800522).

In these instances, landings are best described as 'sporting' – I witnessed one ATR arrival where the undercarriage was barely 20in (50cm) above the water. For take-off, the Franco-Italian turboprop is weight restricted, meaning it can carry just 18 passengers rather than its full complement of 46. The ATR must also use every available foot of runway. As such, when the aircraft lines up for departure, it is then reversed under the guidance of a marshaller until the main gear reaches

the very edge of the paved surface – an impressive sight.

Unsurprisingly, the airfield has caught pilots out. Just a day before my visit, a Britten-Norman BN-2 Islander of Chapi Air flew too low on final approach and hit the small embankment at the end of the runway, tearing off the right-hand landing gear strut before coming to

I witnessed one ATR arrival where the undercarriage was barely 20in (50cm) above the water.

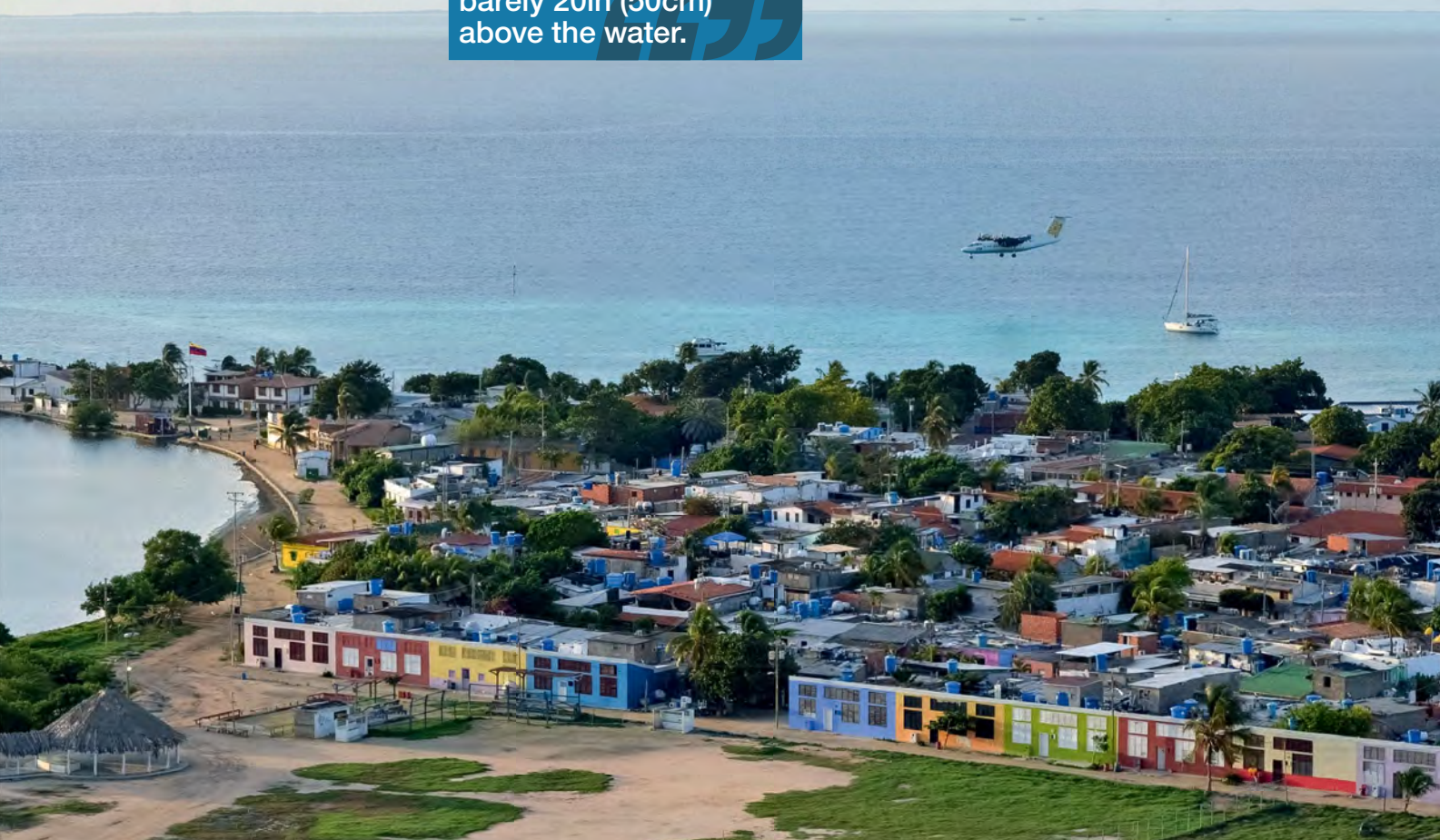
An impressive overview of Los Roques, showing the close proximity of the airfield to the town centre.

rest in the grass. Fortunately, no one was injured in the incident, but the damaged aircraft was still in situ when I arrived in Los Roques, serving as a stark warning of the inherent dangers.

It was at this astonishing destination where I happened on a remarkable sight and one I have yet to witness anywhere else. As I stood on the beach watching the Dash 7 line up for take-off, I soon became aware of several windsurfers who had amassed just offshore behind the waiting aircraft and were using the prop wash created by its four Pratt & Whitney Canada PT-6 engines to fill their sails.

Sadly, my visit to Los Roques was over all too soon and it was time to move on to the next stop on my Caribbean adventure. I headed to the airfield to catch my flight back to Caracas and, lacking dedicated facilities, check-in is instead completed at the local surf shop that doubles as a colourful, wooden passenger terminal for the few flights a day.

Work has been under way on a new building for more than three years >>



but the Chinese-funded construction project has stalled on numerous occasions and, at the time of my visit, only the supporting columns were in place. On the plus side, this delay helps preserve the unique character of this tiny airfield – where else can you step off a commercial flight, walk 150ft (45m) down a sandy track and find yourself in the centre of town?

Onward to Cuba

After arriving back on the mainland, I continued my journey with Copa Airlines via Panama City to Cuba. My first target was the Antonov An-158 flown by Cubana de Aviación. The regional jet, a stretched variant of the An-148, is particularly rare – just seven examples were produced (one of which was the prototype) and the Cuban national carrier is the sole operator. The type is used exclusively on domestic services so I booked a flight to Holguín – this enabled me to head off the beaten track and away from the tourist hotspots, while also

Windsurfers take advantage of the departing Dash 7's prop wash, showing just how close Los Roques' runway is to the sea.



LTA's Dash 7, named 'El Roqueno', uses every inch of the island's 2,600ft (800m) long runway.



The local surf shop doubles as the passenger terminal and check-in desk.





allowing me to return to Havana the same night. My steed for the trip was CU-T1715 (c/n 201-05), produced in 2014 and the second youngest example in the Cubana fleet. The flight experience was positive – the high-wing jet is very quiet inside, while the five-abreast, 2-3 seating layout is comfortable.

Embraer's Legacy

The Antonov was an interesting type to add to my logbook, but I had saved the best for last. With my flight back to

Europe looming ever closer, I booked myself onto a trip to the neighbouring island of Cayo Largo. First stop was the tourist resort of Varadero where, together with part of a group consisting of 23 Russians, two Italians and four fellow Germans, I embarked on one of the rarest types still in regular scheduled service – the Embraer EMB 110P Bandeirante. The turboprop – widely considered to be the starting point of the Brazilian manufacturer's highly successful regional aircraft line – is shorter >>



The colourful domestic terminal at Havana/José Martí.

TOP • The An-158 is configured in a comfortable, five abreast layout.

TOP LEFT • Antonov produced just seven An-158s, and Cubana is the sole operator of the type. The aircraft are used exclusively on the Cuban flag carrier's domestic network.

...where else can you step off a commercial flight, walk 150ft (45m) down a sandy track and find yourself in the centre of town?



The island's surf shop issues re-usable boarding passes to LTA passengers.



than the more popular EMB 110P-1. It is very similar in appearance to its sibling, but features a relocated cabin door, fewer windows and is not equipped with the stabiliser fin under the aft fuselage.

Very few EMB 110Ps remain active today, and Aerocaribbean – Cuba's second largest carrier – is the last in the world to fly the aircraft in regular passenger service. It was not an easy type to track down. I carried out many hours of research before embarking on my trip but uncovered very little in the way of confirmed schedules. It was certainly worth the effort though. On board CU-T1540 (c/n 110091), the oldest of four examples flying with the airline, the distinctive blue curtains across the windows and heavily faded safety cards gave the impression of stepping into a time capsule.

This particular Bandeirante was rolled out in 1976 and, after flying with Brazilian carriers Rio Sul Serviços Aéreos Regionais and Taxi Aéreo Sul (TASUL), it was exported to Cuba in 2001 where it flew with state-owned

charter carrier Aerotaxi before joining Aerocaribbean in 2006. At least two of the airline's four EMB 110s are based at Varadero to operate the daily trip to Cayo Largo.

Homeward-bound

After returning to Varadero, I was thrust very firmly back into the world of modern airliners via a fully booked Thomas Cook Airlines Boeing 767-300ER, which carried me to Frankfurt and home.

In retrospect, I'm very pleased I went ahead with this trip and managed to sample some of the rarest commercial aircraft still in service. There were plenty of doubts beforehand, particularly given the turbulent situation in Venezuela, and preparations were difficult and time consuming,

...the distinctive blue curtains across the windows and heavily faded safety cards gave the impression of stepping into a time capsule.



ABOVE • The Caribbean is a haven for rare and unusual aircraft types, such as Aerogaviota's Soviet-era Mil Mi-8PS, CU-H1427, which continues to operate passenger services.

TOP LEFT • With heavily faded safety cards and distinctive blue curtains over the windows, boarding the Bandeirante was like stepping into a time capsule.

TOP RIGHT • The starboard wing and engine of EMB 110P, CU-T1540, passing low over a turquoise lagoon on approach to Cayo Largo.



The best for last: Aerocaribbean's Embraer EMB 110P, CU-T1540 (c/n 110091), is one of the last remaining active examples in the world.

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The Force Awakens

All Nippon Airways has teamed up with the Walt Disney Company to promote the filmmaker's Star Wars franchise via a series of specially painted aircraft. **Keishi Nukina** recounts his trip on board the first flight of one of the eye-catching jets.

For many years, All Nippon Airways (ANA) was famous for its Pokémon-themed aircraft. In April last year, the Japanese carrier announced it would be painting one of its Boeing 787-9 aircraft in a livery based on the famous *Star Wars* character, R2-D2. This was part of a five-year partnership agreement signed between the airline and the Walt Disney Company, the owner of the *Star Wars* franchise. Last August, ANA revealed it would paint two more aircraft in *Star Wars*

liveries – a Boeing 777-300ER featuring the new character BB-8, and a Boeing 767-300 adorned with R2-D2 on one side and BB-8 on the other. The first, R2-D2 ANA Jet Dreamliner JA873A (c/n 34530), premiered its new livery on October 17, with a sightseeing flight around Tokyo/Haneda airport for a handful of winners of a prize draw. The second aircraft, *Star Wars* ANA Jet Boeing 767-381ER, JA604A, (c/n 32973), operated its first revenue flight on November 22, 2015 from Tokyo/Haneda to Osaka/Itami.

All Nippon Airways' BB-8 ANA Jet looks spectacular sitting on the floodlit apron of the MRO Japan facility in Itami.
ALL PHOTOS AUTHOR UNLESS STATED

BB-8 ANA Jet Boeing 777-381ER JA789A (c/n 40687) is the third themed aircraft. It flew its first revenue service on March 28, from Itami to Haneda, with the author on board.

Roll-out

While the R2-D2 ANA Jet was painted in the US prior to delivery, both the *Star Wars* ANA Jet and BB-8 ANA Jet were repainted into their special liveries at Itami airport by MRO Japan, a subsidiary of ANA.

On March 12, JA789A was ferried from Haneda to Itami, entering the MRO Japan hangar immediately on arrival. It emerged for the first time in its new livery on the night of March 25. After spending most of the following day outside, it was pulled back into the hangar in preparation for the official roll-out two days later.

I arrived at Itami onboard an ANA flight from Tokyo, just in time for the roll-out. I went straight to a place that offers a view of the MRO Japan hangar and apron. Even at 0800hrs the area was already filled with people eager to see the jet leave the facility in its new livery.

On the other side of the fence, ANA staff were getting ready for the offi- >>



Fifty people were invited to see the official unveiling ceremony at Itami, their names chosen from a special prize draw.



Enthusiasts gather to see the BB-8 ANA Jet rolled out of the hangar.



BELOW • *The airline's original Star Wars-themed aircraft, JA873A prepares to depart on its first revenue flight from Haneda to Vancouver on October 18, 2015.*





Enthusiasts and onlookers stop to photograph the aircraft as it is moved onto Gate 10 for the inaugural flight.



LEFT • Boeing 767-381ER JA604A is based at Haneda and operates on domestic services. It features BB-8 on its starboard side and R2-D2 on the other.

BELOW • Boeing 777-381 JA789A rests on spot 53 at Itami ahead of its first revenue service in the livery.

cial roll-out event. Like the first flight of the R2-D2 ANA Jet, the 50 participants for the event were selected via a draw.

At 1205hrs, the lucky 50 arrived on the apron for the start of the event. Our host welcomed the guests and introduced the aircraft. "Ladies and gentlemen, this is the special *Star Wars*-themed aircraft, BB-8 ANA Jet," she announced as the hangar doors started to open slowly to the movie's theme tune.

Five minutes later, the aircraft was pulled out of the hangar completely, and the doors closed behind it. Once the guests had taken their pictures, it was time for the official ANA group photo. The participants were handed bright orange capes, symbolizing BB-8, and lined up in front of the aircraft. The group photo also marked the end of the official roll-out ceremony and enabled the enthusiasts gathered outside the fence to get clear shots of the aircraft. However, it wasn't long before the BB-8 ANA Jet drew another crowd, as a second event got under way for ANA employees and their families.

For the rest of the day, the aircraft was parked outside the MRO Japan hangar enabling photographers to get night shots. At 2000hrs the 777 was towed to parking spot 53 where it remained overnight.

Inaugural Flight

The next morning started on the Itami observation deck where numer-



ous enthusiasts had already gathered in anticipation of the aircraft being towed to Gate 10 from where its inaugural flight to Tokyo/Haneda would depart.

Since the lighting conditions at the deck were worsening and the departure time was nearing, I headed through security. Before going to my departure gate, I walked to Gate 22 together with a group of enthusiasts as it offers a good view of spot 53 where the BB-8 ANA Jet was parked. Once ground staff began moving the aircraft, the whole group ran across the terminal towards Gate 10 to get a photo of the aircraft being towed onto the gate. Needless to say, regular passengers looked at the group running with cameras in hand and wondered what was going on.

With enough photos taken, I went into the ANA Lounge for a quick break before returning to the gate to board. Flight NH22 was scheduled to depart at 1100hrs and 20 minutes before that, a line of passengers waiting to board had already formed. Just before 1100hrs, premium passengers and status holders were invited to board followed by the rest of the passengers, including me. Staff handed passengers a special ANA and *Star Wars*-themed tote bag, containing a neck strap and a clear file, as they made their way down the air bridge.

The movie's theme tune greeted passengers as they boarded the plane and to further add to the mood there was a sweet jar in the shape of Darth »

Despite the flight being just 47 minutes, this passenger wanted to make the most of ANA's lie-flat bed in Business Class.



The Economy Class cabin on the aircraft is in an unusual 2-4-3 configuration.



Passengers were treated to this spectacular view of Osaka as the 777 turned over the city on departure from Itami.
YUKIHIRO KANEKO



Staff involved in painting the jet wave it goodbye as it taxis out at Itami.
YUKIHIRO KANEKO





ABOVE • In its first week of operation, the BB-8 ANA Jet operated the Haneda to Los Angeles route before it crossed Tokyo to operate services from its current base at Narita.

LEFT • One of the stewardesses serves a passenger apple juice – note the Star Wars theme extends down to the disposable cup.



RIGHT • Cabin crew don their BB-8-themed aprons ahead of the in-flight drinks and snacks service.

Vader in one of the galleys.

The BB-8 ANA Jet has 250 seats in a four-class configuration: eight First Class, 52 Business Class, 24 Premium Economy Class and 166 Economy Class seats. Since ANA only offers two classes of service on its domestic flights, premium passengers were seated in the First Class cabin and the Economy Class passengers were distributed among the Business, Premium Economy and Economy Class cabins. As I was late booking my seat on the flight, after looking

around the cabin, I headed down the aisle to my Economy Class aisle seat.

At the Speed of Light

At 1115hrs the aircraft was pushed back and seven minutes later we started taxiing towards Itami's Runway 32L. While taxiing out, ANA staff involved in painting the 777 could be seen holding banners and waving it off. At 1128hrs, the two GE90 engines sprang into action and seconds later the aircraft took off for the first time wearing its new livery.

The seatbelt signs were switched off just four minutes after take-off while the aircraft was still in a steep climb to allow for maximum flight enjoyment on the short sector. This enabled the enthusiasts on board to begin photographing every detail.

In the meantime, the crew, sporting their new BB-8 aprons, prepared for the in-flight service. With enthusiasts clogging the aisles, it was a small miracle the crew managed to complete this on a full 777-300 flight in less than 30 minutes.



Cabin crew handed out BB-8 postcards and flight certificates at the end of the flight.



RIGHT • A Darth Vader-shaped sweet jar greets passengers as they board.

FAR RIGHT • Yoda bids passengers farewell from the L1 jump seat.



The flight was spiced up by the inflight announcement, very much in the spirit of the day: "Thank you very much for flying the BB-8 ANA Jet today. There are two of us on the flight deck today, Han Solo and Chewbacca, who will be flying you to Tokyo. Apologies for departing the Osaka Airport Resistance Base with a delay. Our expected flight time today is 47 minutes. As such, our arrival at Haneda airport, where Luke Skywalker is waiting for us, will be about 10 minutes late. To make up for the delay, we will fly at the speed of light."

The seatbelt signs were switched back on just 30 minutes later and we started descending towards Tokyo. At 1211hrs, the landing gear was lowered, and just three minutes later we touched down on Runway 34R. We reached Gate 53 at Terminal 2 at 1217hrs, bringing the flight to an end.

During disembarking, the crew handed out postcards and BB-8 ANA Jet flight certificates as a goodbye gift. While Luke Skywalker wasn't waiting for us as promised by Captain Han Solo, Yoda was relaxing at the L1 door to see the passengers off.

The Fourth Awakens

In July this year, ANA announced it would paint a fourth aircraft in a *Star Wars*-themed livery, the C-3PO ANA Jet. There are plans for the 777-200 to start flying on domestic routes from the end of March. **ANA**

All of the BB-8 headrest covers were snaffled by enthusiasts within seconds of landing.



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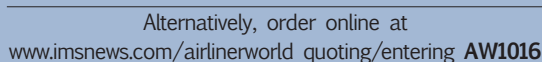
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Interview
with a senior
executive in
the airline
industry.



AeroMobile
Communications CEO
Kevin Rogers.

AeroMobile

Connecting the World

AeroMobile Communications is a UK-based in-flight mobile service provider for the aviation industry. Part of the Panasonic Group's Global Communication Suite, the company provides technology and services that enable airline passengers to use their own cell phones for voice, texting and mobile data during flights. AeroMobile's services are available for installation either at the point of aircraft manufacture (line fit) or on aircraft in service (retrofit) across most of the major commercial types. *Airliner World* spoke to the company's CEO Kevin Rogers, to find out how the system works.



AeroMobile is enabling people to use their mobile phone whilst in flight. ALL PHOTOS AEROMOBILE COMMUNICATIONS UNLESS STATED

AW: Can you tell us a little bit about the company?

KR: AeroMobile Communications is a standalone company that is owned by Panasonic Avionics. Panasonic Avionics provides the connectivity suite to the airlines; they provide all the Wi-Fi and phone hardware. We're a telco [telecommunications company] and we operate the system for the phone network, support the airlines with marketing and communications and bring all the roaming agreements with operators from around the world.

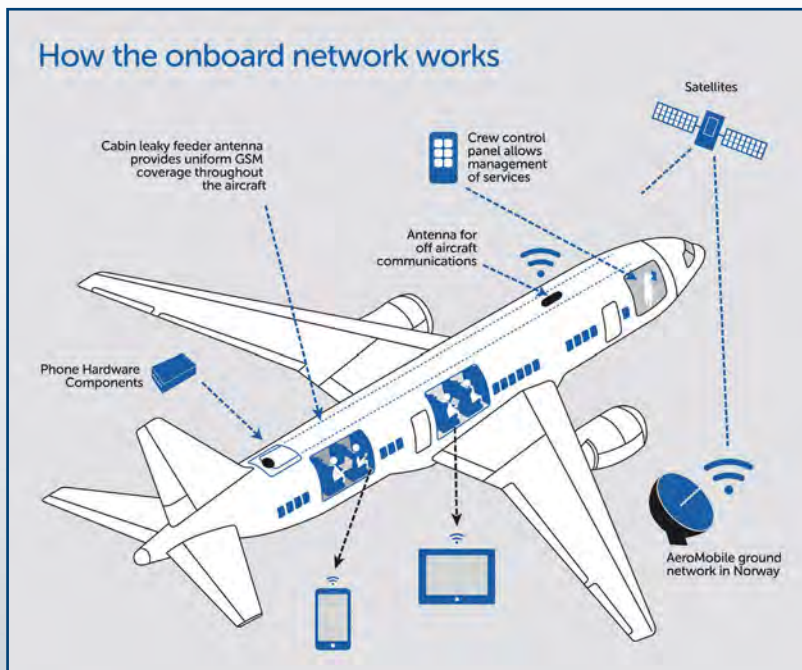
AW: How does the service work?

KR: If you get on a connected flight, you just switch on your phone when the system comes on, make sure you're not in airplane mode, and you will connect to the inflight network. You'll see AeroMobile come up on your handset just like you'd see AT&T if you went to the States and roamed over there. It's a 'no touch' system for the crew and when the aircraft reaches 6,000m [20,000ft] the system switches on automatically and turns off below that altitude. That is all dictated by the Telecoms Regulation we have to adhere to.

You can make a phone call, you can listen to your voicemail, you can send a text, you can use data just like you would on the ground.

AW: How is the service paid for?

KR: I'm with Vodafone – if I get on an Emirates flight, I will connect to the AeroMobile network, but it will be Vodafone that charges me. AeroMobile charges Vodafone the wholesale rate which is a typical roaming model. So that revenue comes to AeroMobile and we pay a percentage of that to the airline as part of a revenue share model. That works very well. We pay some significant sums of money every month back to the airlines for the usage that is generated on the aircraft.



A diagram displaying how the system works.

AW: Is there worldwide coverage?

KR: Basically yes. There are key regulations that stipulate the use of this service; first of all is the airworthiness – so if an airline is going to retrofit it to an airframe or take a line fit delivery with it on, that system like any other box on the aircraft is certified airworthy. Then you have to meet telecoms regulations in order to operate the service say over French airspace or over German airspace. It is currently prohibited in the US. It is very frustrating and at some point they will change it. Basically the service is seamless, you get on the aircraft and fly and it is active all the way through to your destination. That's partly as a consequence of the fact that AeroMobile has been operating a commercial service since 2008. Our launch operator was Emirates who are a major customer and user of the phone service today. The regulatory approvals to cover the globe take some time to come through but once they are in

place, apart from the administration and renewals, it's done.

AW: Why not in the US?

KR: The public tend to associate phones with voice, but that's not what happens, it is no different to how you use it day-to-day. You're doing lots of data; it's WhatsApp, Facebook, [browsing] the internet, a few emails and a couple of texts. Very, very little of the usage of a mobile phone anywhere is actually voice. There is a very emotive reaction to phones and voice [in the US], but it will change in time.

AW: Are there any problems with everybody trying to access the service at the same time?

KR: That's a good question. I'll start with Wi-Fi. First and foremost, satellite technology is getting better and better. Panasonic uses the Ku [band] and there's continual investment in more and more satellite capacity and more and >>

Virgin Atlantic Airways is one of the carriers that offers AeroMobile's services. AIRTEAMIMAGES.COM/ALEX PEAKE



Singapore Airlines recently introduced AeroMobile's 3G services on board its new Airbus A350s.

AIRTEAMIMAGES.COM/
JEFFREY SCHAFER

AeroMobile's Airline Partners

Aer Lingus
airberlin
Air France
Air Serbia
Air Seychelles
Alitalia
Cathay Pacific
Emirates
Etihad Airways
Eurowings
EVA Air
KLM
Lufthansa
Malindo Air
Qatar Airways
SAS
Singapore Airlines
Swiss International Airlines
Virgin Atlantic Airways

The entire Emirates fleet offers both phone and Wi-Fi connectivity on board.

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MEHRAD WATSON



more bandwidth. Inmarsat will argue the same on their side with Ka [band]. If you get on an aircraft with Wi-Fi today, you'd probably have a varied experience, whoever you are flying with. If you get lots of people using the Wi-Fi your speed will be affected. What happens with the phone system is that you get allocated a dedicated bandwidth. So if you are sending a text, want to use the voice service, to make a call, receive a call or listen to your voicemail that is dedicated, so that is not affected at all by the number of people using Wi-Fi. If you use data on your phone, of course there would be an affect depending on how many passengers were using the service. The only real-time service is voice and that is not affected.

AW: Which airlines has AeroMobile partnered with?

KR: We're active with just about 20 different airline customers. To name a few, we have Emirates, Etihad, Lufthansa, Virgin Atlantic here in the UK, SAS, airberlin, Air Serbia and then you start moving down to southeast Asia where we've got Singapore Airlines, Malindo and EVA in Taiwan. We're installed on about 450 aircraft so far. Primarily

what happens is that Panasonic Avionics goes out there and wins the connectivity business with that airline and almost without exception it takes both the phone and Wi-Fi connectivity – obviously that doesn't apply in the States where, for regulatory reasons, Wi-Fi will dominate. Neither has Japan yet passed a regulation for the use of phones but it will do.

AW: How much work is involved in retrofitting the system to an airframe?

KR: Most of the aircraft that have been retrofitted will receive an antenna and full connectivity. Let's say the Panasonic KU antenna has been fitted after the event; the aircraft already has provisions in place; there is what we call a leaky feeder antenna which runs down the length of the cabin to provide the coverage. Put simply, it's then a case of putting the box in the rack.

AW: Can it be fitted to any aircraft?

KR: The answer is almost! What Panasonic has done extremely well over the years is getting a whole catalogue of certifications for different airframes and different airframe configurations.

There's a thick catalogue of different types, so 747, 777, 737, A380, A350, A340, A330 and A320; pretty much all the major commercial airframes are now covered.

AW: Do you pitch the system to private jet owners and operators?

KR: The business jet market is very significant and something we are considering. At present we are on the bigger commercial jets in the VIP market.

AW: What are the challenges facing AeroMobile?

KR: On the one hand, the service is extremely successful but the airlines are saying 'do I need both [Wi-Fi and phone] going forward?' There are some challenges, but we are saying you need to put both on if you want to maximise your passenger experience and that tends to be what the airlines are about. It is giving passengers that choice of connectivity, at the right price to give the best possible experience. That's where our focus is at the moment. The two go hand-in-hand, they offer complementary revenue streams to the airline and they extend across the cabin the demand for connectivity. This is the crux of the proposition that we are instilling with the airlines and that is getting a lot of traction. If you look at the marketplace for connectivity – Panasonic through us offers phone and Wi-Fi, OnAir offers phone and Wi-Fi, everybody else is Wi-Fi only. There are a number of reasons for that and one of them I'm sure is because it takes quite a long time to get to the point we are at.

AW: What's next for the company?

KR: We have the roll-out of the 3G technology – we currently have six airlines operating [it] – with more in the pipeline that we haven't announced yet, but we will in time – and our existing airline partners are gradually upgrading. 3G enhances the experience to a level very similar to what you have on the ground.





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35 Years – and st

In the first of two parts, **David Dorman** examines the turbulent development of the British Aerospace 146, the United Kingdom's most successful commercial jet aircraft.



The hazy mid-morning of September 3, 1981 at British Aerospace's (BAe) Hatfield factory, just north of London, was the backdrop to the first flight of the prototype BAe 146, G-SSSH (c/n E1001), destined to become Britain's most successful jet airliner.

Thirty-five years later and after a production run of 394 aircraft, more than half of those built including its later successor – the Avro RJ – are still in service, with some 12 million flying hours having been accumulated to date. It is entirely possible that the type will still be in service for another 20 years in some of its newly found 'second-life' roles.

Over the years, the BAe 146 has had to endure financial tribulations, programme upheavals and some

criticism (mostly related to engine reliability and maintenance costs in the early years). Despite this, the jet is well established internationally as a reliable, safe, economical jet transport in a wide variety of roles, supported fully by the original equipment manufacturer (OEM) – BAE Systems Regional Aircraft.

Genesis

The birth of the BAe 146 was not straightforward. Conceived by de Havilland/Hawker Siddeley Aviation in the late 1960s, the project went through several iterations before the HS146 evolved with its characteristic high wing and four engines.

Some had misgivings as to whether airlines would buy a short-haul jet with four small engines, given the more traditional twin-jet designs, however,

the configuration offered some great advantages. Exceptional airfield performance was key, fitting the originally conceived market application for the aircraft as a turboprop replacement, primarily for developing countries, capable of accessing shorter airfields.

That market was never fully realised as regional carriers of emerging nations invariably found it difficult to finance a jet replacement. Yet in the

The very distinctive profile of the four-engined British Aerospace 146 – the UK's most successful commercial jet airliner.

AIRTEAMIMAGES.COM/
TIMO BREIDENSTEIN

ill going strong



...the 146 is well established internationally as a reliable, safe, economical jet transport...

late 1980s, the short-field ability of the BAe 146 was perfect for city centre airports such as London City (LCY) where it was the only jetliner able to use the facility for more than 20 years.

The configuration meant the omission of leading edge slats and thrust reversers, while slow landing speeds and powerful brakes made touching down a pleasure. The Avco Lycoming ALF-502 engine was chosen because

it was exceptionally quiet and, even today, the jet meets the latest ICAO Stage 4 noise levels.

The type's design was optimised for the regional air transport market where heavy utilisation over short sector lengths demand high reliability. Other features included doors at each corner to aid quick disembarkation, optional airstairs, battery-starting for operations away from main bases, an auxiliary power unit (APU) and low sill height freight holds.

The HS 146 go-ahead was announced in August 1973 by Hawker Siddeley, with the company and the UK Government sharing development funding. But a year later the oil crisis and international recession led to the project being shelved by the manufacturer, declaring it was not financially viable.

The Labour government, swayed by trade union representations, provided sufficient funding to keep the project ticking over until such time as the aerospace industry was nationalised, which occurred in April 1977 with the formation of British Aerospace.

The go-ahead for the redubbed BAe 146 was given 15 months later as part of a new civil aircraft manufacturing strategy. This also involved later decisions to join Airbus Industrie as a full partner and to launch both the Jetstream 31 and ATP turboprop programmes.

Initially two variants were offered – the smaller BAe 146-100 (70-85 seats) and the BAe 146-200 (85-100 seats). The larger Series 300 (110-112 seats) came along in 1987. Roll-out of the first jet, G-SSHH (c/n E1001), on May »



In a bid to emphasise the BAe 146's low noise footprint, the first two prototypes were suitably registered G-SSSH (c/n E1001) and G-SSHH (c/n E1002).

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20, 1981 coincided with a launch order from US regional carrier Air Wisconsin for four BAe 146-200s with options on four more, setting the programme on its way.

Initial Operational Review – North America

Air Wisconsin chose the BAe 146 to replace its de Havilland Canada Dash 7s, which it used on very short routes, averaging just over 120 miles (193km) and linking towns and cities in Illinois, Wisconsin and Ohio primarily to the bustling hub airport of Chicago/O'Hare. As many as 13 sectors a day for each aircraft were commonplace.

The airline, (later becoming part of United Express), operated ten BAe 146-200s and five Series 300s, plus three Series 100s acquired when it took over Aspen Airways of Denver, which was also subsumed into United Express. It flew the type for 23 years until April 2006.

The first US customer of the BAe 146 was Air Wisconsin, which announced an order for four aircraft during the prototype's official roll-out ceremony.

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WestAir Commuter Airlines, another United Express carrier, acquired six Series 200s to serve United's hubs at Los Angeles and San Francisco. It also took on the ex-Presidential Airways -200 fleet at Washington/Dulles when it collapsed, flying the jets for several years on feeder services.

The major breakthrough for the type was, however, the sale of 20 Series 200s (plus 25 options) to Pacific Southwest Airlines (PSA) of San Diego. The low noise footprint of the BAe 146

was crucial since many Californian airports, especially Orange County, had severe noise restrictions.

Dubbed the 'Whisper Jet' it could fly with a full payload from Orange County to Seattle or Kansas City while other types were severely payload restricted.

PSA took delivery of its first example, N346PS (c/n E2022) *The Smile of PSA*, in June 1984. Notably, the interior featured larger overhead luggage bins to cater for the American





carry-on baggage. Later, it converted the six-abreast seating for 100 passengers to a five-abreast 85-seat layout. This was necessary because the bigger American travellers made six-abreast too uncomfortable in a fuselage a little bit narrower than a 737. Clearly, this had an impact on the economics, but passengers loved the extra space.

The success at Orange County led to the incumbent airline – AirCal – being forced to respond, which it did, with an order for six Series 200s all of which were delivered in 1986.

Both PSA and AirCal suffered the same fate as the volatile US air transport market, fuelled by deregulation, saw PSA being acquired by East Coast operator US Airways and AirCal being bought by American Airlines. Both major carriers seemed to struggle with the smaller orphan fleets of BAe 146s, and eventually the type was withdrawn from service and stored in the Mojave Desert – a serious blow to the aircraft's image.

Further north in Canada it enjoyed success with ten Series 200s flying with Air Nova and Air BC as Air Canada Connectors until absorbed into Air Canada Jazz in 2002. These jets served both well for 17 years. Another Canadian carrier, Air Atlantic, based in Halifax, also operated three Series 200s between 1990 and 1998.



A Slow Start in Europe...

Dan-Air was the first British carrier to put the BAe 146 into service following delivery of the first of an eventual three Series 100s in May 1983. Dan-Air initially employed the type on the Gatwick to Dublin route before deploying the jets to Gatwick and Newcastle to serve a destinations such

The major breakthrough for the type was the sale of 20 Series 200s (plus 25 options) to Pacific Southwest Airlines (PSA) of San Diego

ABOVE LEFT • Dan-Air became the British launch customer for the 146 with the first example joining its fleet in May 1983.

REG BONNER COLLECTION

ABOVE • Air Wisconsin pioneered the concept of code sharing and, as a United Express carrier, it rapidly became one of America's largest regional airlines during the 1980s.

BAE SYSTEMS VIA DAVID DORMAN

TOP • The type's major breakthrough in the North American market came with the sale of 20 BAe 146-200s to San Diego-based Pacific Southwest Airlines.

REG BONNER COLLECTION

ABOVE LEFT • An early success for the BAe 146 in Africa came with the order for a single Series 100 jet from the Government of Mali. The aircraft, TZ-ADT (c/n E1009), was delivered in October 1983 and remained in service for two years before being returned to the UK.

REG BONNER COLLECTION

Bergen, Dublin, Stavanger, Toulouse and Berne with its short runway. The Series 100 proved very successful and reliable, leading Dan-Air to trade the fleet in for five larger -300s, delivered between 1989 and 1992.

Air UK, the country's third largest carrier at the time, ordered two Series 200s in November 1987, later augmented by four more and a pair of Series 300s as well as some early Series 100s, becoming the only British company to operate all three variants. Air UK's ten-strong fleet was transferred to KLM UK when the Dutch flag carrier acquired its British counterpart in 1998, with eight examples going on to form the backbone of KLM's new low-cost offshoot Buzz launched two years later.

Faroe Islands-based Atlantic Airways was another early user of the BAe 146, acquiring a second-hand Series 200 in March 1988. The type was ideally suited for operations at the airline's tricky Vágar base and, in time, its small fleet grew to five aircraft. It was later augmented by the Avro RJ before the type was phased out in 2014, after 26 years, as larger Airbus A319s were delivered.

The manufacturer had high hopes for long-term success with Meridiana of Italy, which ordered four Series 200s for services out of the short runway at Florence. The carrier also created a Spanish subsidiary which acquired two Series 300s, but this operation didn't last long.

>>

...but Asia Takes up the Cudgels

A lengthy demonstration tour by the aircraft to China where 13 cities were visited in 1984 led to an initial contract for ten Series 100s from Civil Aviation Administration of China (CAAC) in 1985. These operated for China Eastern Airlines, China Northwest Airlines and Air China. Later, a further eight Series 300s were delivered between 1992 and 1994 for China Northwest.

Further south the Himalayan Kingdom of Bhutan placed an order for a single -100 in 1988 for national carrier Drukair to provide extra capacity and performance linking the high altitude Paro airport with neighbouring countries. A second example was added later.

In the late 1980s/early 1990s Thai Airways International took delivery of four -300s and a single -100, these were flown on a range of domestic routes until 1998 when they were replaced by bigger 737s. In Taiwan, Makung Airlines flew five Series 300s between 1990 and 1998.

Elsewhere, the Latin American and African markets yielded small returns. A hopeful initial sign was in Brazil where an order from Transportes Aéreos da Bacia Amazônica (TABA) for two Series 100s led to the first delivery in December 1983. This seemed the perfect BAe 146 operation – replacing turboprops serving short, unmade airstrips – but the combination of a company with insufficient financial resources and the high duty imposed by the Brazilian authorities on spares proved its eventual undoing.



On one of the numerous sales tour undertaken by the British Aerospace 146 sales team, BAe 146-100, G-OBAB (E1004), overflies the spectacular Victoria Falls in Zimbabwe.
REG BONNER COLLECTION

The manufacturer tried to sell the BAe 146 to Varig for its *Airbridge* service, linking Rio's downtown Santos Dumont airport with São Paulo, to replace Lockheed L-188 Electras, but this came to nothing. However, later, a rival airline, Air Brasil, was set up using several -200s, but this proved short lived. Elsewhere, in Latin America Chilean flag carrier LAN-Chile flew BAe 146-200s for seven years between 1990 and 1997.

In Africa, one Series 100 jet was placed early on with the Government of Mali, but several years elapsed before a -200 example was sold to the Zimbabwe Government and a Series 100 to Air Botswana.

In Australia and New Zealand an initial contract for two Series 200s from the Ansett Group for operation by its subsidiary Ansett WA in Perth led to further orders from the mainline Ansett Airlines, as well as from its subsidiary East-West Airlines, plus more from Ansett New Zealand.

Ansett was part of the Australian transport giant TNT, which in 1986 stunned the airfreight industry with an 'umbrella' deal for up to 72 BAe 146 QT (Quiet Trader freighters). In the event TNT took delivery of just 29 aircraft, which were converted off the production line at PEMCO's Dothan, Alabama base. Taken together the combined deals from the Ansett/TNT

A BAe 146 landing at London City Airport with the familiar Canary Wharf skyline in the background. The split airbrakes at the rear of the fuselage are clearly visible.
BAE SYSTEMS VIA
DAVID DORMAN

Severe competition meant that the BAe 146 needed a revamp and this came with the Avro RJ...



Group made the company the world's largest operator of the type by the 1990s. Several BAe 146 QCs (Quiet Convertible) were also built, initially placed with UK charter airline Princess Air and Air Jet of France.

Enter the Avro RJ – but Financial Troubles Loomed

Severe competition meant that the BAe 146 needed a revamp and this came with the Avro RJ, announced in 1990. The main change was the selection of the LF507 engine with marginally higher thrust, full authority digital engine control (FADEC) and, more importantly, lower maintenance costs to counter this impediment to sales for the earlier BAe 146.

New flight deck avionics with Cat IIIA autoland were incorporated as well as reduced empty and higher operating weights to boost payload were also introduced. This meant that



payloads could be increased by up to 28% over the Series 100, by 13% over the Series 200 and 12% over the Series 300. An upgraded 'spaceliner' interior with better seating, lighting and luggage bins was also incorporated.

The Series 100 became the RJ70, the Series 200 the RJ85, and the Series 300 was revamped as the RJ100. A fourth variant, the RJ115 – seating 115 passengers at five-abreast and up to 125 people at six-abreast with extra mid-cabin exits, was also offered, but didn't enter production.

The Avro RJ proved to be a success and a strong contender, but competition for BAe also came from new leasing companies in the mid-1980s that were placing aircraft on attractive and flexible lease terms to operators, financed partly through bulk discount buying from the manufacturers. Selling aeroplanes through traditional financed purchases or even via cash deals was being severely disrupted.

British Aerospace tried but failed to get lessors interested in acquiring fleets of the quad jet. At one

unsuccessful meeting the CEO of a leasing organisation drew a picture on the white board to illustrate the type of jets they were interested in – it had a low wing and two underslung engines. Clearly a high-wing, four-engine regional jet was too 'quirky' for them.

So BAe responded with its own leasing offering. A special purpose company (SPC) was created to buy the jets financed by banks over a 15-18-year period (the head lease). This SPC then mandated BAe to remarket the aircraft to airlines on shorter (typically three- or five-year operating leases). BAe guaranteed the head lease payments from the SPC to the banks so building up a large contingent

liability on the balance sheet.

For the time that BAe was able to lease 146s to carriers the strategy seemed to work, but the company did not really understand the mechanics of the leasing business. There was little oversight of lessees' business plans, and little attention paid in the operating leases to maintenance reserves to be paid for by the lessees.

In 1992 the civil aviation market took a sharp downturn in the wake of the Gulf War and subsequent recession and weaker airlines started to fail and aeroplanes were returned. BAe was heading for financial disaster as scores of BAe 146s were sent back. Drastic measures were needed. >>

For almost 20 years, the BAe 146 and its successor, the Avro RJ, were the only jet airliners certified to operate in and out of London City Airport.

REG BONNER COLLECTION

TOP • The BAe 146's rugged design with engines mounted high on its wings made the type ideal for unprepared airstrips.

REG BONNER COLLECTION

One of a pair of 146-100s that flew for Brazilian carrier Transportes Aéreos da Bacia Amazônica (TABA), overflies Rio de Janeiro on a domestic flight.

REG BONNER COLLECTION





Firstly, jet production was cut from 40 aircraft a year to just 18. Hatfield was closed and production transferred to Woodford, Cheshire. Secondly, a new company – Avro International Aerospace – was formed to manage this programme and sell to blue-chip customers. Thirdly, the legacy leasing portfolio had to be addressed and so

The aircraft proved very popular in Australia.

BAE SYSTEMS VIA
DAVID DORMAN

An SA Airlink Avro RJ85 turns over Robben Island on its approach to Cape Town.

BAE SYSTEMS VIA
DAVID DORMAN

the Asset Management Organisation (AMO) business was created. This was the world's first tied lessor and had 118 BAe 146s – of which 21 were idle and 40 due to be returned in 1993 – (plus Jetstream and ATP turboprops) in its portfolio.

A bold business plan – the so-called 'three steps to heaven' was enacted.

First was to place the idle fleet as soon as possible. Second was to move the fleet gradually on to better creditworthy customers with hardened-up and longer leases. Third was to sell the jets at the right time off the portfolio.

To underpin this massive restructuring British Aerospace took a financial provision of £1bn – the biggest corporate write-off in British industrial history at the time.

Avro Success

Very soon the new Avro business plan started to bring rewards. The first Avro RJ sales had already been booked previously with an order for 20 RJ70s from Business Express in the USA. Alas, only three of the 20 were ever delivered and these were returned after just three years' service. Much more promising was the Crossair contract for four RJ85s in 1993, as this led to a further 12 RJ100 orders for operations on behalf of Swissair. When the latter ceased operations on March 31, 2002, Crossair effectively took over with the carrier under the new name Swiss International Air Lines. Only now, 23 years later, is the Swiss fleet of 20 RJ100s gradually being replaced by the new Bombardier C Series.

Substantial contracts were also signed by leading carriers such as Turkish Airlines and Avianca subsidiary Sociedad Aeronáutica de Medellín (SAM) of Colombia. A huge vote of confidence came from Lufthansa CityLine, which followed up an initial deal for three RJ85s in 1994 with further business, leading eventually to a fleet of 18 aircraft that saw service until August 2012.

Both Swiss and Lufthansa CityLine took full advantage of the proven



Star Peru has a fleet of ten BAe 146s, covering all three variants of the original design, plus a QT freighter.

BAE SYSTEMS VIA
DAVID DORMAN

ability of the BAe 146/Avro RJ to fly from LCY, which gave them a huge competitive advantage. This was followed by BA CityFlyer, which used the RJ100 from the downtown airport, and the Irish airline CityJet (which had launched services from LCY with several BAe 146s leased from Asset Management) and later went on to acquire 23 RJ85s.

A huge order was placed for the Avro RJ from Belgian national airline Sabena which signed up for 23 RJ85s in September 1995 for use by its Delta Air Transport regional subsidiary, to add to six BAe 146s it already flew. Eventually, Brussels Airlines, as it became known, flew a total of 32 quad jets.

The biggest fleet was, however, that of Northwest Airlines feeder carrier Mesaba Airlines, which initially signed for 12 RJ85s in October 1996, and then converted 24 options to firm orders in July 1997 to bring its fleet to 36 aircraft.

In addition to these large deals, smaller but nonetheless financially stable carriers also did business with Avro. These included Air Malta for three RJ70s, Uzbekistan Airways for three RJ85s and Aegean Airlines of Greece for six RJ100s.

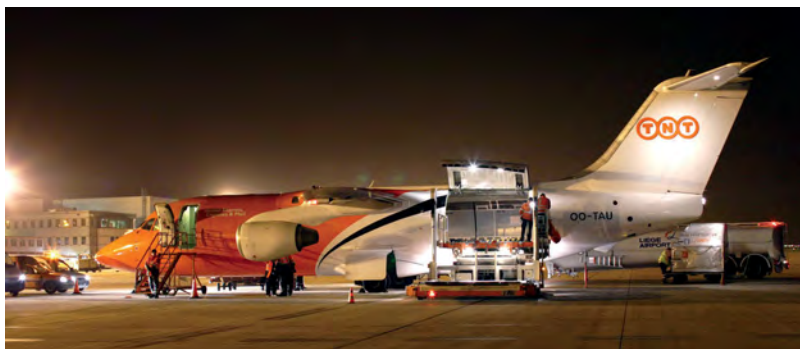
Asset Management Does the Business

In parallel with the success of Avro, its sister business – BAE Systems Asset Management (AMO) – started to tame the leasebook.

Within a few months significant business had been transacted with several customers. Eight aircraft were sold from the portfolio and leases were negotiated or extended on 60 others with 26 airlines worldwide. These leases were properly structured, with full financial protection and maintenance reserves built in, return conditions specified and with operators' business plans fully understood and signed off.

Significant early business was with National Jet Systems of Adelaide, Australia, which leased six BAe 146s that were flown on behalf of QantasLink. The flying kangaroo logo on the tail of the BAe 146 was a great boost to its market rehabilitation. Other significant customers added extra aeroplanes including Malmö Aviation of Sweden, LAN-Chile, Air UK, Jersey European Airways and Flightline. New customers such as Caribbean Express, Hamburg Airways and Eurowings were also signed up.

In parallel with the success of Avro, its sister business – BAE Systems Asset Management (AMO) – started to tame the leasebook.



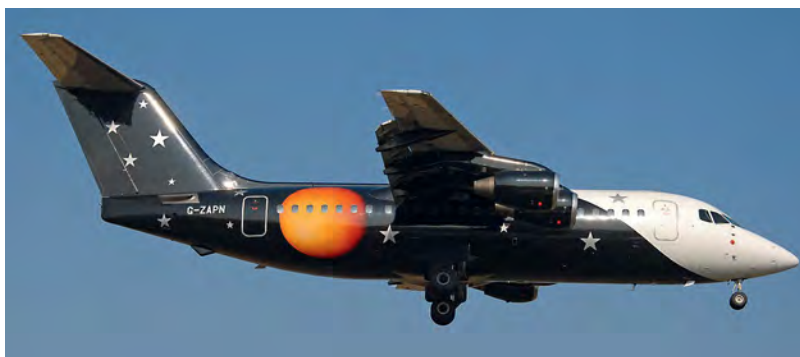
In 1986, British Aerospace launched the BAe 146QT on the back of a huge order for 72 aircraft from TNT; however, only 29 examples were built and delivered.

BAE SYSTEMS VIA
DAVID DORMAN



Former Filipino carrier, Asian Spirit operated this former Government of Mali Series 100, RP-C2999 (c/n E1009) under lease from National Jet Systems for almost four years between January 2005 and November 2008.

BAE SYSTEMS VIA
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Former Ansett New Zealand 146-200QC, G-ZAPN (c/n E2119) flew with Titan Airways from September 1999 until May 2013 when it was sold to Pionair Australia.

BAE SYSTEMS VIA
DAVID DORMAN



Turkish Airlines had a fleet of 14 Avro regional jets consisting four RJ85s and ten RJ100s on domestic and regional services.

BAE SYSTEMS VIA
DAVID DORMAN

Eurowings grew with AMO over time and 15 years later were part of an extensive Lufthansa Group operation of the quad jet with Lufthansa CityLine, Air Dolomiti, and extending later to Swiss and Brussels Airlines with some 80 aircraft.

Underpinning the improvements in the aircraft was a value enhancement programme, including an Engine Maintenance Cost Protection Programme signed with Textron Lycoming, which provided guaranteed costs for all scheduled off-wing maintenance – thus removing one of the previous customer concerns

about the type.

In 1995 Aer Lingus Commuter became another flag carrier to sign leases for BAe 146s, while an announcement by Jersey European that they had signed ten-year lease extensions on most of their jets was welcomed.

By 2000, the business (including turboprops) had signed 1,100 used aircraft lease transactions, had sold 150 aircraft and managed 500 refurbishments. The portfolio included 101 quad jets and together with 340 turboprops was valued at \$2.3bn.

New customers included Australian >>

airExpress for a BAe 146QT freighter operation in Australia, Atlantic Southeast Airlines of the USA, British carrier Titan Airways, Air Jet of France and Melilla Jet of Spain. Existing companies extending leases included Air BC and Air Nova in Canada, Ansett Australia, Malmö Aviation, Air Wisconsin and Air UK, while the programme of sales from the portfolio started with Air Atlantic of Canada, Eurowings, Titan Airways, British Regional Airlines, Jersey European and National Jet Systems.

A steady stream of new carriers were introduced to the BAe 146/Avro RJ product. Probably the most significant was SA Airlink, which signed for three BAe 146-200s in 2007 and now has a fleet of 12 Avro RJ85s. Other customers included Star Perú (Peru), Aerovias DAP (Chile), Astra Airlines (Greece), Asian Spirit (Philippines), Romavia (Romania), MDLR Airlines (India) as well as four different operators in Indonesia.

Moving Forward

In 2000 BAE Systems Regional Aircraft launched the successor Avro RJX programme and three prototypes were built and entered the flight test programme. First orders had been received from British European and Drukair. But citing deteriorating market conditions in the regional airline business and a poor trading outlook, parent company BAE Systems cancelled the programme in November 2001.

The BAe 146 has had some success as a military transport with a number of examples having served with the Queen's Flight of the Royal Air Force.

REG BONNER COLLECTION



One of three RJX prototypes seen during an early test flight. The programme was cancelled by BAE Systems, which cited deteriorating market conditions and a poor sales outlook.

BAE SYSTEMS VIA
DAVID DORMAN

BAE Systems Regional Aircraft was recreated in April 2002 as a service business with three strands: asset management; customer support; and engineering. In 2011 the Asset Management business was sold to the US-based Fortress Investment Group and became Falko Regional Aircraft, which continues with a portfolio of nearly 50 Avro RJs, plus other regional types it has added. [RJX](#)

Next month...we look at the remaining BAE Systems Regional Aircraft business centred on Prestwick, Scotland, which now focuses on continuing airworthiness, customer support and engineering for the in-service fleet including product enhancements as the BAe146/Avro RJ start their second-life journeys.

BAE Systems Regional Aircraft was recreated in April 2002 as a service business with three strands: asset management, customer support and engineering.



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Is there a demand for a new 'middle of the market' airliner? Boeing thinks so, but Airbus claims it's already built one. **Richard Schuurman** delves deeper into the conflicting ideas of both manufacturers.

Looking at the aircraft families being offered by the major commercial aircraft manufacturers across the world today, it would on first glance appear they have covered all requirements – from the nine-seater Britten-Norman BN-2 Islander right up to Airbus' A380 super jumbo offering more than 600 seats.

But according to Boeing, there's a niche sector still worth exploring, that of the so-called 'middle of the market' (MoM). It was one of the hottest topics discussed at this year's Farnborough International Airshow.

What is the middle of the market?

Basically, the MoM is described by Boeing as the 4,000nm (7,408km) to 5,500nm

The Boeing 757 and 767 models have been occupying the MoM for more than three decades. The US manufacturer believes there is a market for a new airliner to fill the gap, however, rival Airbus says it has already built the aircraft airlines want: the A321neoLR.

AIRTEAMIMAGES.COM/
JØRGEN SYVERSEN

(10,186km) range segment. Over the past three decades the US manufacturer has provided alternatives with its single-aisle 757 and twin-aisle 767 models, both entering service during the early 1980s.

However, with 757 production ending in October 2004, and the larger wide-body now only being built for freighter and aerial refuelling roles, there's a perceived capacity 'hole' in the airliner families offered by the 'big two'.

Airbus counters the argument by saying it already has an aircraft to fit the MoM with its A321LR, which it launched in January 2015.

At a press presentation at Farnborough, Mike Delaney, Boeing's Vice President and General Manager of Airplane Development, shared his views on the current and future markets and how the aircraft families his company is building complement each sector.

Comparing range and available seat capacity for all the commercial aircraft in service today, he used a slide which showed two distinct groupings: the single-aisle jets at the lower left-hand end of the chart and the larger twin-aisle aircraft higher to the right. The 757 and 767 models clearly sat in between the two circles, in the so called 'middle of the market'.

Delaney explained: "What we're hearing from airlines is that they're looking towards the higher range. We're being told they prefer an aircraft that can fly close to 5,000nm >>

RIGHT IN THE

MIDDLE



ABOVE • **Boeing reports that airlines are looking towards the higher range of the middle of the market, with an aircraft capable of flying close to 5,000nm (9,260km) while carrying 250 to 270 passengers on board.** AIRTEAMIMAGES.COM/ OLEG BELYAKOV

ABOVE RIGHT • **The single-aisle 757 can seat 200 to 295 passengers depending on the variant and its cabin configuration.** AIRTEAMIMAGES.COM/ STEVE FLINT



(9,260km) with 250 to 270 passengers.”

He went on to define the market further by saying that in Boeing’s current market outlook – covering the next 20 years, it predicts a requirement for 5,100 new small widebody aircraft in the 787 and A350 category, worth an estimated \$1.35bn. Although this is 900 fewer than the previous year’s forecast, it’s still more than twice the size of today’s fleet.

As expected, Asia will be the biggest market, with 2,060 aircraft, followed by Europe and North America. Boeing doesn’t specifically mention MoM in the forecast, but Delaney believes it could support a requirement for between 2,000 and 3,000 aircraft.

Range and payload

Boeing has been looking at a potential MoM aircraft for four years but, according to Delaney, it’s only in the past 12 months that the company has really been sounding out airlines on the concept.

“The discussion with them is about range and payload. What they’re telling us can simply be distilled down to three main points: some want a 757-like aircraft with more seats, others require more range – while the remaining want both, more seats and additional range. That’s what we have to figure out now.

“As we better understand the requirement, our next step is to look at

the cross-section of the fuselage. This will determine everything. One aisle or a twin-aisle design is still very much the question.

“Is there a preference with the airlines? Yes, but I’m not going to tell you what!”

Neither was Delaney willing to go into the results of a recent *Aviation Week/Bank of America/Merrill Lynch* survey, which said 60% of 507 airlines surveyed preferred a twin-aisle configuration.

He did, however, reveal that Boeing was conducting its own extensive survey, but “we will all have to wait” for the results before any further announcements are made.



More than 1,000 757s were manufactured before production ceased in October 2004, and today some 730 aeroplanes remain in service. Boeing believes airlines are now seeking suitable replacements for their ageing fleets. AIRTEAMIMAGES.COM/ RENATO SERRA FONSECA



Industry observers believe a short-term solution to the MoM conundrum might be a further stretch of the 737 MAX 9, the so-called MAX 10. But Boeing would face significant engineering challenges if the idea becomes a reality. AIRTEAMIMAGES.COM/WEIMENG



So will it be a 767 successor?

Some publications have already produced images of a 767-like airliner, claiming it to be the new MoM jet. Delaney responded by saying that nothing has been decided yet and that Boeing was in "no hurry".

But with an MoM airliner set to enter service during the mid-2020s at the latest – respondents to the above survey preferring an earlier date of 2023 – Boeing has little time to develop a clean-sheet design.

The adoption of technology already being developed for the 787 and 777X programmes – including an all-composite wing – would save time, but it would still be tight. Most importantly, the manufacturer has to figure out how to build and sell the MoM for the lowest possible price, rumoured to be around \$70m each, with a total investment in the programme of more than \$10bn.

Delaney is clear about one thing,

however: "The MoM aircraft will not be a 787 'light' with a shortened fuselage. Making a big airplane smaller just isn't the way to go.

"Some, like Airbus, may like that, but I don't see it makes any sense. The 787 wing is too big; the engines are too big. The Dreamliner is designed for a completely different market segment – it really wouldn't work."

MAXimum Possibilities

Before Boeing decides how to proceed with a clean-sheet MoM type, it could look at the so-called 737 MAX 10 as an interim solution. Stretching the 220-seat MAX 9 by a few more inches and adding extra seats might be a quick 'win' – however, it will fall short of the 270 seats most airlines require as a minimum capacity.

But stretching the MAX again isn't as easy as it seems. The wings would require strengthening and the under-

carriage a complete redesign, while more powerful engines would be needed too.

The MAX's current CFM LEAP-1B engines are thrust-rated at 28,000lb and just wouldn't be powerful enough. Boeing could opt for the 33,000lb LEAP-1A used by Airbus for its A320neo Family, but installing a different powerplant doesn't make practical sense for operators from a commonality point of view.

"Maybe we'll do the MAX 10," Delaney said. But he wasn't very convincing.

"There are lots of conversations ongoing about what the top-end of the MAX is," he added. "It's manageable, but we don't want to penalise the rest of the MAX family for one model. And for us the heart of the market is where the MAX 8 is. That's where we're focusing."

MoM Power

Currently there isn't an engine in production that would suit a clean-sheet MoM design – a powerplant in the 35,000 to 45,000lb thrust range. Right now all the major manufacturers are busy on other programmes, but none >>

ABOVE LEFT • The larger Boeing 767 was the US manufacturer's first widebody twin jet and was designed concurrently with the smaller single-aisle 757. Boeing treat both designs as almost one programme helping to reduce both risks and costs, with both jets sharing features such as avionics, flight management systems, and instruments as well as handling characteristics. AIRTEAMIMAGES.COM/CHRIS JILLI

ABOVE • The twin-aisle widebody airliner can carry between 185 and 375 passengers over distances of up to 6,385nm (11,825km). AIRTEAMIMAGES.COM/EDWIN CHAI

As we better understand the requirement, our next step is to look at the cross-section of the fuselage.



The A321LR is the MoM aircraft and the successor to the 757, and I'm happy that airlines are agreeing with us.

John Leahy, Airbus

of them would shy away from an MoM aircraft should it come along.

"When they'll decide to build it, we'll be there to give them an engine. That's the way it works, that's why we exist," confided James Speich, Director Marketing Commercial Engines at Pratt & Whitney, who is directly involved in the company's PurePower Geared Turbofan (GTF) programme.

The current PW1000G-series produces 35,000lb of thrust and, says Speich, there's room for growth and it could be developed all the way up to 100,000lb.

There was a similar reply from CFM International, with the LEAP-family capable of delivering more power. Meanwhile, Rolls-Royce might offer its own geared fan, called the *UltraFan*.

ABOVE LEFT • The LEAP-1B engine will power the 737 MAX Family when the first examples enter service next year. But the powerplant would have to be developed further if it was to be used for any future stretched variant of the airliner family.

AIRTEAMIMAGES.COM/
ANTHONY GUERRA

ABOVE RIGHT • Airbus' response to the market is its A321LR, featuring a 97 tonnes maximum take-off weight and a range of 4,000nm (7,408km), making it ideally suited to transatlantic routes. AIRBUS

BELOW • Whatever decision Boeing ultimately makes regarding its future MoM aspirations, it is highly unlikely that airlines will see a new jet from the US manufacturer much before the middle of the next decade. AIRTEAMIMAGES.COM/DOMINIK SPULLER

But it's still in its early development stages: "Time is on our side as the MoM aircraft might not come along until 2025," a company representative said.

The Competition

While Boeing continues to study the market and its options, Airbus is looking on with some amusement at what its rival's doing. As far as the European manufacturer's concerned, there's no room in the market for another aircraft.

Its Chief Operating Officer-Customers, John Leahy, said at the company's end-of-show press conference at Farnborough: "The A321LR is the MoM aircraft and the successor to the 757, and I'm happy that airlines are agreeing with us."

The A321LR, a 206 to 240-seat variant of the A320neo Family with a 4,000nm (7,408km) range, has so far picked up 60 firm orders, although this is still a long way short of the 1,000 units Leahy predicted the market needed at its launch.

Sales of the entire A321neo Family meanwhile stand at 1,269, comfortably outselling the 737 MAX 9, which has only sold 210. "Upsizing is the latest

market trend," Leahy said.

Airbus has clearly stated that an MoM jet sits firmly in its A320neo Family, and when the 'LR' variant enters service in 2019 it will be well ahead of any aircraft Boeing will be able to offer.

Asked by *Airliner World* if Airbus sees the market shifting towards a 5,000nm (9,260km) range aircraft, as Boeing does, Leahy responded bluntly: "Is that the paper aircraft from the paper 'plane company you're talking about?"

"We know exactly where the market is. It's probably where Boeing wishes it wasn't, but we have got that market. We don't need another aircraft."

Has Boeing neglected the MoM for too long since it stopped building the passenger versions of the 757 and 767? "I don't think so," said Delaney. "We had the 757 and now they're coming to their replacement cycle, so I think we're in the right place. We're okay."

We might have to wait until next summer's Paris Airshow before we hear anything else from Boeing about its MoM aircraft plans, but it will be intriguing to see which company is right. **VIEW**





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Austrian Te

WE KEEP AIRCRAFT MOVING

Austrian Airlines Group's maintenance, repair and overhaul (MRO) division has a very simple mission: "We keep aircraft moving." The Vienna-based subsidiary, known as Austrian Technik (AT), has inhabited an extensive hangar complex to the west of the airport's passenger terminals for more than 40 years. Its primary function is the ongoing support of the Austrian flag carrier's 80-plus fleet of jet and turboprop aircraft. This includes base and line maintenance, engineering services, technical training and component repair and storage, all carried out by a workforce of 800 technicians and administrative staff.

A Jack of all Trades

The MRO prides itself on being a one-stop shop. Its Vienna base spans three hangars and incorporates maintenance and repair shops and a technical training area. The cutting-edge Maintenance Operations Centre (MOC)

The Vienna-based MRO faces the challenging task of maintaining its parent Austrian Airlines' large and varied fleet of jet and turboprop aircraft. **Tony Dixon** finds out how it's done.



The cutting-edge Maintenance Operations Centre (MOC) lies at the heart of AT's operation

lies at the heart of AT's operation, open 24 hours a day and seven days a week to support the carrier's fleet and provide an immediate response to any technical problem, anywhere in the world.

From here, a team of engineers use state-of-the-art tracking equipment to undertake real-time monitoring of Austrian Airlines' aircraft and, according to the MRO, are "capable of providing an unbeatable short response time in trouble shooting or defect

Austrian Technik's Vienna base spans three hangars, a host of maintenance and repair shops and a technical training area.

AUSTRIAN AIRLINES

rectifications".

This reduces the number and duration of Aircraft on Ground (AoG) episodes, enabling its parent carrier to maintain a high degree of reliability and punctuality.

This is no mean feat. Austrian Airlines currently operates 82 aircraft ranging from the short-haul Bombardier Dash 8-Q400 turboprop and Airbus A320 Family to the Boeing 767-300ER and 777-200ER widebodies, and from the

ageing Fokker 70/100 to the modern Embraer 195, the newest type to fly in Austrian's red and white livery. With such a large and varied fleet, and an executive jet division – Austrian Technik Executive Services (ATES) – that undertakes third-party work on a wide variety of types such as the Global Express and Challenger 850, AT's engineers are kept busy.

The oldest of the MRO's three hangars is the 64,585sq ft (6,000m²) Hangar 1,

chnik



TOP RIGHT • Austrian's new Embraer 195s can be maintained in Vienna and at AT's satellite facility in nearby Bratislava.

The engine overhaul section maintains a wide range of modern powerplants including the General Electric GE90, Pratt & Whitney PW4000, PW150 and CFM International CFM 56s, plus the older Rolls-Royce Tay fitted to its outgoing Fokker fleet.

ALL PHOTOS AUTHOR UNLESS STATED



which was built in 1974 and is used for long-term base maintenance and modification work on the Airbus A319/A320/A321 and Fokker 70/100 fleets. AT also employs this facility for third-party work on 737s as well as executive jets covered by ATES.

The larger Hangar 2, completed in 1982, lies adjacent and offers 104,400sq ft (9,700m²) of floor space, meaning it can accommodate up to ten aircraft – including the 777-300ER – at any given time. The third hangar sits further east again and is shared with fellow Vienna-based carrier and airberlin offshoot Niki. The MRO also has access to a dedicated 764,237sq ft (71,000m²) apron, which features several parking bays and an engine run-up area equipped with baffles that absorb and redirect noise.

AT's array of workshops, including >>

an engine storage facility, tool shop, apprentice training area and the MOC, lie to the rear of Hangar 1 along with a 64,585sq ft (6,000m²) warehouse that is capable of holding more than 100,000 parts and components.

The firm continues to expand and enhance its sizeable facility – an expanded tyre and brake servicing centre was completed earlier this year. Christian Stoegerer, AT's Director of Component Maintenance and Workshops explained to *Airliner World* how the MRO recycles undercarriage units: "We can now do up to 10,000 wheels per year – most of which were previously worked on by [sister company] Lufthansa Technik – with many being completed for third party airlines."

Parent Austrian Airlines is owned by Germany's Lufthansa Group and,

as a result, there is a great deal of work passed between the engineering divisions of the two companies.

Stoegerer continued: "Once the wheel section has been disassembled, the hub is cleaned thoroughly and checked for cracks and excessive wear while the tyre is sent away to be remoulded. As it is only the tread that is worn and not the sidewalls, each tyre can typically be processed up to six times. Once complete, the letter 'R' is stamped on the outside with a number for reference – 'R1' means that the unit has been remoulded once.

"The whole [recycling] process takes six days to complete, including repainting and refitting. In most cases, the only parts that need to be fully replaced are the carbon fibre brake pads."



ABOVE LEFT • The firm completed its expanded tyre and brake servicing centre earlier this year and is now able to service up to 10,000 units per year.

A New Man in Charge

Michael Kaye took up his post as the Head of Austrian Technik on May 1. *Airliner World* found out how the Baltimore native is settling into his new position.

AW: You joined AT after nine years as Technical Director with Lufthansa subsidiary Germanwings. How does this role differ?

MK: In both positions, I have been responsible for the continuous airworthiness of the aircraft which is my single most important responsibility. Beyond that, the positions are very different. Germanwings is a low-cost carrier with a fleet of 62 A319s and A320s, operating point-to-point with bases throughout Germany.

With this style of operation, it's not possible to build up dedicated engineering support beyond line maintenance. The key focus instead is to manage your MRO contractors. I am very excited about my role in Vienna and its hub operation as the resulting economies of scale allow us to maintain and develop more capabilities for our fleet. At the same time, our subsidiary in Bratislava is only an hour's drive away and has a significant cost advantage.

AW: How many different aircraft types do you deal with?

MK: Our fleet spans a wide breadth of manufacturers including Airbus, Boeing, Bombardier, Embraer and Fokker. This variety



is necessary to satisfy the needs of our hub in Vienna, which serves destinations ranging from small domestic airports to major international

hubs on the other side of the globe. Speaking for everyone at Austrian Technik, we are a company of aviation enthusiasts and we take great pride in being able to handle such a diverse fleet. We have 800 workers here at Vienna, while our subsidiaries AT Bratislava and Tyrolean Technik [which maintains the Dash 8-Q400 fleet] have 180 and 120 respectively.

AW: What difficulties does such a varied fleet pose?

MK: I think the greatest challenge for our staff, both now and in the future, is not only to be good engineers – which I feel they are here – but good generalists. A typical legacy carrier in the 1970s and 80s was very self-sufficient with respect to aircraft maintenance. Depending on the airline's size, this could include line and base maintenance, component workshops and perhaps even engine workshops. The engineer was responsible in his area of expertise but today the decision to repair or replace [components] or the incorporation of modifications has to be taken in light of power-by-the-hour contracts, maintenance cost guarantees, or leasing contracts. The engineers need to have the additional knowledge of these agreements in addition to their engineering expertise.





Austrian's new Embraer 195s can be maintained in Vienna and at AT's satellite facility in nearby Bratislava.

LEFT • The company currently runs a three-and-a-half-year apprenticeship for new engineers. This includes training in a dedicated facility, interspersed with four or five week-long periods on the shop floor working with the qualified mechanics.

The engine overhaul section is next door and is equipped to handle a wide range of aircraft powerplants from the giant General Electric GE90 and Pratt & Whitney PW4000 used by Austrian's widebody fleet, to the CFM International CFM56 and PW150 fitted to the A320 Family and Dash 8-Q400 respectively. Notably, AT still undertakes work on the ageing Rolls-Royce Tay 620 and 650, though the engines are being withdrawn as the carrier disposes of its remaining fleet of Fokker 70s and 100s.

A Steady Flow

One problem faced by AT is seasonality. "Our parent airline is busiest during the summer months and therefore prefers all major aircraft

maintenance to be completed during the winter," Stoegerer noted.

This creates problems for the MRO division, which tries to maintain a steady flow of aircraft through its hangars year-round. "This is often very difficult to achieve so we started to look at third-party work – such as the executive and business jet market – during our quieter summer months."

However, this ad hoc work can't be guaranteed so the recent contract from Australian carrier Alliance Airways to overhaul its Fokker fleet was most welcome. "Our quiet summer period coincides with the Australian winter and the airline's quiet time, so that's when we do most of the work [at AT's satellite facility in Bratislava, Slovakia – see panel]." >>

Austrian Technik Bratislava

The Slovakian capital of Bratislava lies less than an hour's drive to the east of Vienna and is home to Austrian Technik Bratislava (ATB), a full subsidiary of the Austrian MRO. The firm specialises in the maintenance of the Fokker 70 and 100, once used extensively by Austrian Airlines but now being phased out in favour of newer Embraer 195s. Speaking to *Airliner World* during a tour of the facility, ATB's Managing Director Wolfgang Henle explained: "We can perform heavy maintenance to C- and D-Check level on both models of Fokker, plus Embraer E-Jets and even the Airbus A320. We did our first Fokker 'heavy C' in October 2006 and have completed about 150 since then."

"We have already had 11 aircraft come here from [Alliance Airways in] Australia for C-Checks and this number will only grow in the future. Alliance has bought all of Austrian Airlines' Fokker 70s and 100s for its own operations or for onward sale to companies like Qantas or Virgin Australia. The aircraft is proving very popular Down Under."

The MRO also undertakes third-party work for European operators such as Helvetic Airways, Carpatair and Trade Air. Despite the close proximity of its parent in nearby Vienna, ATB offers a distinct advantage – wage costs in Slovakia are significantly lower than in Austria, translating to lower maintenance charges for customers.

"This enables us to be competitive with our main local rivals such as LOT [Polish Airlines] in Warsaw, which also supports E-Jets," Henle noted.

The firm also utilises flexible contracts, known as 'Working Time Account', under which engineers work around 45 hours a week during the busy winter months, reducing to 35 hours a week in the summer, for a fixed monthly salary.



Training for the Future

With the global commercial aviation sector facing growing demand for qualified aircraft engineers, AT has moved to guarantee a steady flow of new entrants into the firm through its apprenticeship scheme.

The MRO currently recruits around ten applicants a year for its three-and-a-half-year course (plus up to three for administrative roles). A team of three qualified engineers are responsible for apprentice training, while a further 18

TOP LEFT • ATB can undertake heavy maintenance on the Fokker 70 and 100 up to C- and D-Check level. For the Australia-bound examples, this includes the installation of new technology in the cockpit.

TOP • Austrian's fleet ranges from the 76-seat Bombardier Dash 8-Q400 to the widebody Boeing 777-200ER.

AT staff are either directly or indirectly involved in the process.

Airliner World met René Pfister, head of AT's training workshop, who explained how the course works. "We have 38 trainees at present, starting with 15- or 16-year-old students coming from all over Austria. This includes two girls, although we would like more.

"The first year of the course concentrates on mechanical engineering in the classical sense starting with simple drilling, milling and benchwork. The

second year progresses on to electronics – including integrated circuits and semi-conductors – and this then develops into computing, IT information storage and flow charts with a ten-week course on composite structures added in the final full year."

Basic training is undertaken in the apprentice area – at the rear of the hangars – and is interspersed with four or five week-long periods on the shop floor working with the qualified mechanics.



Pfister added: "At the end of the course, the students take their Final Apprenticeship Examination, coming out as what we called a 'Skilled Worker'. We aim to offer a job to all successful students."

The AT apprenticeship course provides a useful foundation for those wishing to progress further. Some of the modules contribute towards an international Category A mechanic qualification, while a full B1 licence can be achieved within seven years.

The firm places its emphasis on quality, aiming to provide "best-in-class technical services" to its customers.

The MRO is taking on an increasing volume of third-party work as it moves to address issues surrounding seasonality.
AUSTRIAN AIRLINES

Though AT exists primarily to serve its parent, the MRO faces strong competition from rivals across Europe and further afield when it comes to third-party work. The firm places its emphasis on quality, aiming to provide "best-in-class technical services" to its customers.

As part of this pledge, AT has restructured its technical operations and has continued to invest in areas such as its

maintenance and repair shops and its cutting-edge MOC. It has also ramped up its relationship with Lufthansa Technik, though it says its real strength comes from its staff.

The MRO's mission statement says: "The entire team is trained and educated to the highest possible standard. With the help of a continuous improvement programme, our employees are contributing themselves to the further development of Austrian Technik." **AWA**

Airlander

As I turn onto final approach for Runway 28L at San Francisco International Airport, my eyes instinctively scan the instruments and then the airframe slowly pitched up and down. Mindful of the fact that there's around 280ft (85m) of aircraft behind my seat and that we're carrying about 10 tonnes of payload, it seems odd to see only 55kts on the airspeed indicator (ASI). I can only be at the controls of one aircraft – the exciting and innovative Airlander 10.

Of course, I'm not actually at the controls of this leviathan of the skies but sampling the simulator under the watchful eye of Hybrid Air Vehicles (HAV) Chief Pilot Dave Burns during a visit to the historic airship sheds at Cardington in Bedfordshire.

As I pulled up outside the massive structure I could see

the Airlander through the open doors. It looks amazing, and up close it's even more impressive. Although based on the Long Endurance Multi-Intelligence Vehicle (LEMV), which was built by HAV in partnership with Northrop Grumman as a long-range surveillance aircraft for the US Army, the Airlander is a much more sophisticated machine.

Unlike earlier airship and Zeppelin designs, it doesn't have an internal structure, but becomes rigid through being filled with helium at just above atmospheric pressure. The hull is made from what HAV describes as a 'super-strong material' specially designed for the project by Warwick Mills and assembled by ILC Dover, which makes NASA spacesuits.

This material features Vectran (a carbon fibre-weave fabric) on the inside and a layer of Tedlar (a polyvinyl fluoride film) on the outside, which

together sandwich a number of layers of Mylar (stretched polyethylene terephthalate) film that retains the helium inside the envelope.


The mass of the aircraft is supported from strengthened features built into the hull during manufacture. Multiple attachment points on each part of the structure enable the load to be distributed evenly.

Although not as big as the aerial behemoths of the 1930s (it's less than half as long as the R101, which was built in the same shed), at 302ft (92m) long and 85.3ft (26m) tall it's still much larger than any other aircraft flying today.

Taming the Beast

In fact, no words or pictures can truly do it justice – it's only when you stand next to it and look up at the massive tailplane and huge elevators (the two combined would comfortably cover an area the size of a tennis court) that you begin to appreciate just how big it

The Airlander's aerodynamic hull, which combines an elliptical cross-section with a cambered longitudinal design, provides up to 40% of the vehicle's lift.



Are giant airships about to make a comeback?

Dave Unwin visits Cardington, the home of the Airlander.

really is.

Consequently, when I sat down at the controls in the simulator I initially found it hard to believe it's been designed as a single pilot machine, but as Burns began to brief me on the overall layout of the cockpit and controls, I'm impressed at how intuitive they seemed.

There's a side-stick on the right to control pitch and yaw and a throttle quadrant on the left, which carries levers for the four 325hp Centurion 4.0lit diesel engines. It's important to understand that these are not throttles – 'thrust levers' is probably a more accurate description.

By moving them the pilot controls the propeller loads through Full Authority Digital Engine Controllers (FADECs) via the Airlander's flight control network. There's a detent (a catch) at the idle position, which produces zero thrust. Pushing the levers forward from idle commands

forward thrust, while pulling them aft of the detent produces reverse thrust of up to 40% of the maximum propeller load.

However, these don't simply turn propellers but form an integral part of the machine's propulsors. There are two at the aft of the Airlander fitted with moveable vanes that provide thrust vectoring for control in both pitch and yaw. The other two – mounted on the sides of the hull just aft of the mission module, which houses the flight deck and cabin – only provide thrust vectoring in pitch.

Pitch and yaw can also be controlled through the sidestick, which operates the rudders and elevators on the four tailfins. These are arranged in an 'open X' configuration – the top two fins carrying the rudder and the bottom two the elevators.

The sidestick and thrust levers >>



actually look as if they could have come from an aeroplane, but more unfamiliar controls (at least to this fixed-wing pilot) include a three-position switch for the forward propulsors, a lever to control the vane positions on the forward propulsors, a vane control selector for the aft vanes and a control sensitivity selector for the aerodynamic surfaces. These are so big and powerful that you wouldn't want to have the same control authority at 18kts as you'd have at 80kts, so this switch changes the control deflections from +/-25° at 'Full' to +/-12.5° at 'Half'.

Pitch and yaw can be controlled aerodynamically through the sidestick and also via the vanes on the rear propulsors – there's no direct control in roll.

Trim is achieved by several different methods, primarily by pumping air between the fore and aft ballonets for longitudinal trim, although it can also be adjusted by transferring fuel fore and aft.

Ballonets are air bags inside the Airlander's envelope that compensate for the change in atmospheric pres-

TOP • The Airlander is an impressively controllable machine for its size.

ABOVE • Pitch and yaw can also be controlled through the sidestick, which operates the rudders and elevators on the four tailfins. These are arranged in an 'open X' configuration – the top two fins carrying the rudder and the bottom two the elevators.

ABOVE RIGHT • Chief Pilot Dave Burns poses in the cockpit of the Airlander.

The Airlander's heavily glazed underslung gondola provides excellent visibility for passengers and crew

sure during climb or descent, causing the helium lifting gas to expand or contract, enabling the control of the envelope pressure at about four inches Water Gauge or 10mb superpressure. As Airlander climbs, the ballonet air valves, which are normally set to AUTO, automatically open to allow air to escape and hence to control the overall envelope pressure. As one approaches the limit of 2,000 feet per minute climb rate, selecting the air valve to OPEN will ensure that the

valve is fully open to achieve the maximum rate. On descent, the reverse is true, where the electric ballonet fans will activate to blow air into the ballonets to compensate for contraction of the helium. These fans are designed to permit a maximum descent rate of 2,000 feet per minute.

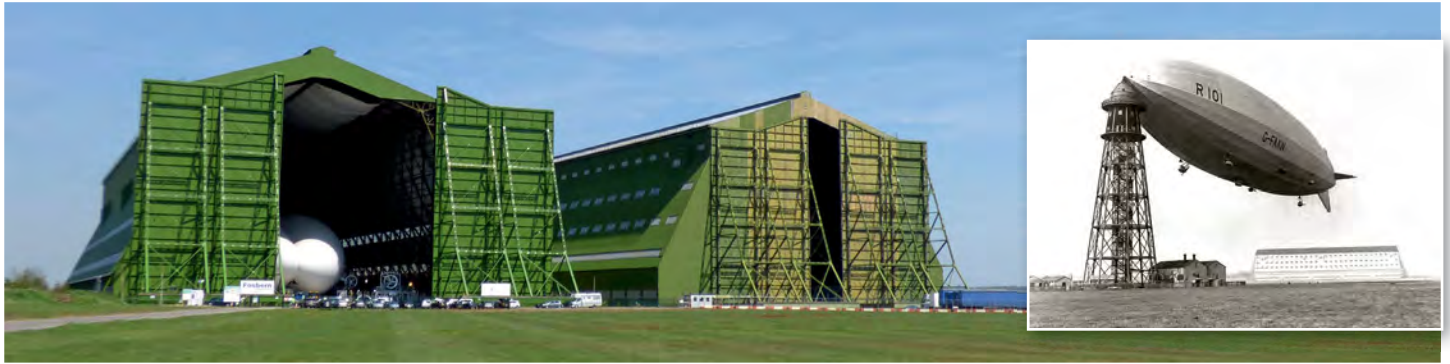
Pitch and yaw trim can also be adjusted aerodynamically (there's a 'coolie hat'-type trim switch on the sidestick).

The instrument panel consists of two Garmin G600s as the Primary Flight Display (PFD), two Garmin G430W Nav/Com units plus a DME, ADF transponder and audio panel.

The electronic flight information system (EFIS) combination of electronic attitude indicator and horizontal situation indicator will be familiar to anyone who's ever flown an aeroplane with these systems. The engine display is directly underneath the G600s, with an ESI-1000 electronic standby instrument to the right and a large mechanical ASI underneath.

Two large dials to the right of the radar altimeter display the helium pressure in the port and starboard





helium compartments, with all the other instruments (such as amp and volt meters), several switches and a lot of circuit breakers contained on the large overhead panel.

Some of the switches also control valves and fans that regulate the amount of air and helium in the ballonets, all of which are usually left in the auto position.

Limitations

Pressure ceiling is the absolute altitude the Airlander can achieve at a given helium fill, requiring the ballonets to be emptied and thus the total volume of the hull filled only with helium.

Another factor to be considered is

ABOVE • Even from a distance the Airlander can be seen through the open doors of the massive building.

ABOVE RIGHT • The R101 was built in the same shed that now houses the Airlander. These huge, listed structures (there are two) are visible behind the R101.

It's not hard to imagine myriad uses for an aircraft with such an impressive load-carrying capacity that can operate from almost anywhere.

'superheat'. This condition exists when the helium is warmer than the outside air temperature (OAT) and affects the amount of lift that any airship produces. However, although this can be quite critical for most airship designs, it is considerably less so on Airlander, which operates at up to 10% statically heavy (where the hull and payload weight exceed the maximum buoyancy supplied solely by the helium), whereas most airships function at up to 4% heavy.

Airborne

Satisfied that I seemed to at least understand the fundamentals, Burns 'unfroze' the simulator and I took con-

trol. I was immediately impressed at how sprightly the handling was and soon appreciated why the aerodynamic controls have a 'sensitivity' switch.

Obviously, many of the parameters I usually explore during an air test, such as the slow speed handling and stall characteristics, are completely redundant so I concentrate on just getting a feel for the overall handling.

The first thing I notice is that in some ways the Airlander feels more like a ship than an aircraft, and realise just how apposite the term 'airship' is. For example, when a fast ship such as a destroyer turns to starboard, it actually rolls to port – the Airlander behaves in exactly the same way, which >>



initially was a little disconcerting although I soon got used to it.

Once I felt I'd got the hang of it, I commenced an approach into the airport, and although I nearly got into a pilot-induced oscillation (PIO) I had the wit to simply let go of the sidestick and it soon damped itself out.

Having lowered (actually, inflated) the landing skids and slowly reduced power and speed, slightly to my surprise I achieved a pretty creditable landing right on the centreline.

Take-off was equally straightforward, as the combination of rudder, elevators and four separate propulsors provides plenty of control, particularly as the forward pair can be vectored to three distinct positions: 20° nose up, 0 or 20° nose down for pitch control. The aft propulsor vanes can also be used to control yaw.

It really is an impressively controllable machine for its size, and it's not hard to imagine myriad uses for an aircraft with such an impressive load-carrying capacity that can operate from almost anywhere.

The Airlander's flyability lends itself to many unique roles that involve utilising its long endurance and its land-anywhere capabilities. The team at HAV see it in both defence roles such as surveillance, patrol and border security as well as civil roles, especially humanitarian aid and as an emergency communications platform. One of its initial variants will certainly



The Airlander successfully completed its maiden flight on August 17.

The prototype Airlander was damaged in a landing accident at Cardington on August 24 at the end of its second flight. The crew escaped unharmed and work is now ongoing to repair the aircraft.

be for passengers too on sightseeing and tourism trips in an amazing aircraft like no other.

As I drove away from Cardington, teams of workers were busy making preparations for the Airlander's first flight, which occurred on the evening of Wednesday, August 17. The maiden sortie was a total success.

Stephen McGlennan, CEO of HAV, explained that although the team had

waited until the evening for the wind to drop, the airship could "operate very happily" in up to 35kts of wind. He added: "Think of a big helicopter, a really giant helicopter. This can do the same thing it can do – that's to say, provide air transportation for people and goods without the need for a runway – but this thing can take more over longer distances. It's cheaper and its greener. It's a great British innovation." He continued: "It's a combination of an aircraft that has parts of a normal fixed-wing aeroplane, but it's also part helicopter and part airship."

Reflecting on the successful first flight, Burns told *Airliner World*: "It really was exciting – what a privilege to be able to pilot that huge machine through the sky on the first flight. It behaved exactly as we had expected from the simulator exercises and all the systems performed faultlessly. What a pity the flight was so short, but I was concerned that sunset was approaching. Everything else was in place when the wind dropped, so we just had to go flying!"

With the project having passed a major milestone, HAV is now looking to 'expand the envelope' (pun very much intended) over the next few months so anyone in the vicinity of Cardington may well see this giant queen of the skies as it wends its way through the clouds. Take a good look – this is the future. **AVI**



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Jumbo Takes Centre Stage

Fences and lampposts had to be removed before the 747 could be towed across from the nearby Hartsfield-Jackson Atlanta International Airport.

Staff look on as the aircraft is rolled the 0.25 miles from the airport to the museum.

Delta Flight Museum has a new star attraction with the arrival of Boeing 747-451 N661US (c/n 23719). A carefully choreographed move saw the jumbo make its last journey, being towed from the nearby Hartsfield-Jackson Atlanta International Airport, across the museum car park to its final resting place on a specially constructed pad in front of the museum's hangars. Prior to this, the aircraft was given a new coat of paint and underwent an interior overhaul to make it ready for future visitors. Work is now under way on the construction of an elevator tower and plaza ahead of the aircraft being opened to public tours in March.



The Aircraft

Dubbed Ship 6301 in Delta service, the jet was the first 747-400 built by Boeing and completed its maiden flight on April 29, 1988. It was initially registered by the manufacturer as N401PW, and used by Pratt & Whitney for engine testing before entering service with Northwest Airlines.

The museum's newest and biggest exhibit was delivered to Northwest as N661US on December 8, 1989 and joined the Delta Air Lines fleet when the two carriers merged in 2008. It logged more than 61 million miles during its 20 year career, and flew for the last time on September 9 last year on Flight DL836 from Honolulu to Atlanta.





The move was a team effort – here are some of the people involved.



The aircraft has had a major makeover inside to make it ready for public viewing. This included removing panels to show its inner workings.

Staff discuss plans for the jet.



MALAYSIA AIRLINES AIRBUS A380 BLU-RAY



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Code: DVD596

ONLY £12.49

Dreamliner Special



This special edition from the team behind *Airliner World* magazine details the revolutionary aircraft from concept through to airline service. It looks at how the aircraft was developed, the innovations that Boeing has incorporated into its design as well as how airlines are using the Dreamliner's impressive economics to drive down operating costs as well as opening up opportunities for new long-haul routes. **Special magazine, 100 pages.**

Code: SPEC787

ONLY £5.99

Volotea Boeing 717-200 Blu-Ray



Volotea is the 254th airline in Just Planes' Flight in the Cockpit series! This fast growing airline is one of only a handful of 717 operators in the world. The airline's Flight Operations Director hosts eight of the 12 flights in this film which is packed with many great pilot presentations and some exciting routes and destinations across Italy. **Region-free Blu-Ray, Running time 263 minutes.**

Code: BR051

ONLY £19.49

Extreme Airports Vol.1 DVD



Filmed across five continents, this spectacular DVD features the dramatic checkerboard approach at Hong Kong/Kai Tak, breathtaking Caribbean landings at St. Maarten and St. Barts, extremely short runways in Thailand and Alaska as seen from the cockpit and Brazil's 'aircraft carrier in the city', plus we go back in time to the Vietnam War in Saigon...and much more! Join us and visit some of the world's most extreme and dangerous airports! **Region-free DVD, Running time 60 minutes.**

Code: DVD744

ONLY £12.49

Extreme Airports Vol.2 DVD



Volume Two of the Extreme Airports series includes the dramatic approaches of Tegucigalpa and Rio de Janeiro. We also visit Gibraltar, with a highway intersecting the runway and head to Taipei's crowded downtown airport. Finally we capture close-up approaches at Corfu and on San Francisco's busy twin runways! **Region-free DVD, Running time 70 minutes.**

Code: DVD754

ONLY £12.49

Extreme Airports Vol.3 DVD



Volume 3 of the Extreme Airports Series includes the Caribbean island of Saba, with the world's shortest commercial runway at just 400m in length! Viewers will also witness a unique approach into Baghdad in 2001 along with two of the most extreme US airports in San Diego and Washington DC. We also take you airside at the short runways in Malawi and Ethiopia along with busy London City Airport in the heart of the UK's capital. **Region-free DVD, Running time 75 minutes.**

Code: DVD755

ONLY £12.49

European Air Charter Bac 111 DVD



This program takes you on the last scheduled commercial revenue flight of the airline's Bac1-11 at the end of March 2002. This is an opportunity to discover the "One Eleven" inside and out, learn about the cockpit, its instruments as you fly from Bournemouth to Turin and back. You also fly the Boeing 737-200 on a variety of European routes from two of European Air Charter's bases: Bournemouth International and London Stansted. **Region-free DVD, Running time 185 minutes.**

Code: DVD739

ONLY £12.49

Gemini Air Cargo DC10 DVD



Gemini Air Cargo becomes the 189th airline to join the World Air Routes series and 13th in the USA. This DVD follows an aircraft on a rotation from Belgium to three African countries with stops in Nigeria, Kenya and Libya. The pilots go over their DC10 in detail from the walkaround on the ground to the cockpit pilot and flight engineer presentations, flight plan loading, fuel system and much more. **Region-free DVD, Running time 186 mins.**

Code: DVD742

ONLY £12.49

West Air Europe ATP DVD



Established in 1962, Gothenburg-based West Air Sweden has carried the Scandinavian nation's overnight airmail for the last decade, a service it still carries out today and one that is featured on this DVD. This programme takes you in the cockpit of the British Aerospace ATP and HS748 for a series of postal mail flights throughout Sweden. Also included is an air-to-air photography session of the BAe ATP, as seen on the cover shot of this DVD. **Region-free DVD, Running time 112 minutes.**

Code: DVD743

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Nok Air Bombardier Dash 8-Q400 HS-DQG (c/n 4528) transited via Malta on July 12, on its delivery flight from Canada to Thailand.

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Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	manufacturer's construction/serial number
cn	number
cnvrt'd	converted
dbf	destroyed by fire
dbf	damaged beyond repair
dd	delivery date
ex	previous reg'n
ff	first flight
frtr	freighter
lrf	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
st	sold to
std	stored
tba	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed

Emirates [EK/UAE]

A6-EAH	A330-243	409	ret to lessor, rr 2-RLAI to Chop Chop 30.05.16
A6-EKT	A330-243	293	lrf 14.04.16, ret to DAE Capital after lease & rr EI-FSE to DAE Leasing (Ireland) 7 07.06.16
A6-EMI	777-21HER	27250	lrf19.06.16, std Dubai
A6-EPN	777-31HER	42333	dd 30.06.16
A6-EUB	A380-861	213	ex F-WWSZ, dd 17.06.16
A6-EUD	A380-861	216	ex F-WWAM, dd 30.06.16

flydubai [FX/FFDB 'Sky Dubai']

A6-FGB	737-8KN	60955	dd 20.06.16, st Jackson Square Aviation on delivery & lsd back
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Qatar Airways [QR/QTR 'Qatari']

A7-BEJ	777-3DZER	60336	ex N5506Y, dd 10.06.16
A7-BFJ	777-FDZ	62085	ex N5573S, dd 30.06.16

Air China [CA/CCA]

B-7595	737-89L	43415	dd 13.06.16, lsd fr GECAS
B-7878	787-9	34306	ex N9676G, dd 12.06.16, Charleston #123
B-7879	787-9	34307	dd 22.06.16, Charleston #124
B-7892	737-89L	60851	dd 27.06.16
B-8492	A321-232	7161	ex D-AVXL, dd 22.06.16

Beijing Capital Airlines [JD/CBJ 'Capital Jet']

B-8551	A321-231	7191	ex D-AVZI, dd 28.06.16, lsd fr SMBC Aviation Capital
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China Eastern Airlines [MU/CES]

B-2399	A320-214	1093	ferried Jinan – Tucson 23-25.06.16 for storage & ret to lessor after lease
B-5376	737-86N	35226	ret to lessor 07.16 after lease, rr M-ABJJ to G3 MSN 35226 12.07.16
B-5838	737-89P	40953	ex N5573P, reg'd 06.06.16, lsd fr Avolon
B-5839	737-89P	40952	reg'd 06.06.16, lsd fr Avolon
B-5840	737-89P	41304	reg'd 06.06.16, lsd fr Air Lease Corp
B-7349	777-39PER	43279	ex N50217, dd 30.06.16
B-7966	737-89P	41492	dd 28.06.16
B-8496	A320-214	7049	ex B-000J, dd 24.06.16, lsd fr CDB Leasing
B-8556	A320-214	7189	ex F-WWDC, dd 17.06.16
B-8559	A321-211	7194	ex D-AVZK, dd 28.06.16

China Express Airlines [G5/HXA]

B-3227	Canadair RJ900LR	15410	ex C-GICP, dd 21.06.16
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China Postal Airlines [CF/CYZ 'China Posta']

B-2824	757-21B	25889	reg'd 08.06.16, for cargo conversion
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China Southern Airlines [CZ/CSN]

B-6620	A319-132	2815	ret to AerCap 06.16 after lease
B-7968	737-81B	43889	dd 23.06.16, lsd fr ICBC Leasing
B-7971	737-81B	44386	dd 20.06.16, lsd fr BOCOM Leasing
B-7972	737-81B	44388	dd 09.06.16, lsd fr BOCOM Leasing

China West Air [PH/CHB 'West China']

B-8643	A320-214	6492	ex F-WTGD, dd 10.6.16 Kuala Lumpur KUL – Tianjin
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Dalian Airlines [CA/CCD]

B-7597	737-89L	44914	dd 30.06.16, lsd fr Air China
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Fuzhou Airlines [FU/FZA 'Strait Air']

B-1559	737-86J	37773	ex N378AR, dd 30.06.16, lsd fr Jackson Square Aviation
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Hainan Airlines [HU/CHH]

B-2638	737-808	28220	ret to Aircastle 06.16 after lease
B-7880	787-9	60283	dd 07.06.16, leased from Air Lease Corp
B-7886	737-84P	41386	dd 24.06.16

Juneyao Airlines [HO/DKH 'Air Juneyao']

B-8408	A320-214	6944	dd 21.06.16 ex-Toulouse after temp storage
B-8536	A320-214	7116	ex F-WWBH, dd 02.06.16
B-8537	A321-321	7065	ex D-AVXW, dd 08.06.16
B-8538	A320-214	7169	ex D-AVVT, dd 24.06.16
B-8539	A321-231	7199	ex D-AVZO, dd 30.06.16

Kunming Airlines [KY/KNA 'Kunming Air']

B-7870	737-7LY	60153	dd 16.06.16, lsd fr CBD Leasing
B-7871	737-7LY	60154	dd 28.06.16, lsd fr CDB Leasing
B-7873	737-8LY	60178	dd 20.06.16, lsd fr CDB Leasing

Loong Air (Zhejiang Loong Air) [GJ/CDC 'Hualong']

B-8320	A320-214	7027	ex B-000C, dd 06.06.16
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Reignwood Asia Aviation [ICU]

B-106F	DHC-6 400	930	ex C-GVEP, reg'd 18.07.16
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SF Airlines [03/CSS 'Shun Feng']

N207CR	767-338ER	29118	cnvrt'd to 767-338ER(F) at Singapore QPG, rr B-6996, updates last month's section
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Shandong Airlines [SC/CDG 'Shandong']

B-7567	737-85N	61426	dd 22.06.16
B-7569	737-85N	61317	dd 16.06.16, leased from Dragon Aviation

Shanghai Airlines [FM/CSH 'Shanghai Air']

B-7638	737-89P	42066	dd 13.06.16, lsd fr Air Lease Corp
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Shenzhen Airlines [4G/CSZ 'Shenzhen Air']

B-8413	A320-232	197	ex F-WWDH, dd 30.06.16
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Sichuan Airlines [3U/CSG 'Sichuan']

B-8601	A321-211	7198	ex D-AVZN, dd 28.06.16
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Spring Airlines [9S/CQH 'Air Spring']

B-8327	A320-214	6858	ferried Toulouse – Shanghai PVG 21-22.06.16 after temp storage
B-8346	A320-214	6874	ferried Toulouse – Shanghai PVG 23-24.06.16 after temp storage
B-8347	A320-214	6881	as B-8346
B-8370	A320-214	6815	ferried Tianjin – Shanghai PVG 17.06.16 after temp storage
B-8371	A320-214	6826	ferried Tianjin – Shanghai PVG 23.06.16 after temp storage
B-8427	A320-214	6858	ferried Tianjin – Shanghai PVG 17.06.16 after temp storage
B-8435	A320-214	7016	ex B-000W, dd 08.06.16
B-8436	A320-214	7219	ex F-WWDZ, dd 28.06.16

Tianjin Airlines [GS/GCR 'China Dragon']

B-3038	ERJ 145LJ	14501024	st ECC Leasing Co, rr N127EC to Wells Fargo Bank Northwest 28.07.16
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Tibet Airlines [TV/TBA 'Tibet']

B-8418	A320-214	7059	ex B-000E, dd 27.06.16
B-8420	A330-243	1730	ex F-WWKU, dd 29.06.16

Xiamen Airlines [MF/CXA]

B-7557	737-85C	42926	dd 21.06.16
B-7558	737-85C	42927	dd 27.06.16
B-7559	737-85C	42928	dd 27.06.16
B-7846	737-85C	42929	dd 23.06.16
B-7847	737-85C	42930	dd 21.06.16

YTO Cargo Airlines [HYT 'Quick Air']

B-2897	737-3Y0(F)	24902	ex N108KH, reg'd 12.06.16
B-2898	737-3Y0(F)	24916	ex N106KH, reg'd 12.06.16

Cathay Pacific Airways [CX/CPA]

B-HUL	747-467F	30804	lrf 30.04.16, ferried Hong Kong – Xiamen 07.06.16, reportedly for sale/lease to Silk Way Airlines
B-HUQ	747-467F	34150	ferried Xiamen – Hong Kong 09.06.16, for Cargolux

EVA Air [BR/EVA]

B-16408	747-45E	28092	seen wfu at San Bernardino 16.05.16 in basic cls, mostly parted out
B-16727	777-35EER	43291	ex N1003N, dd 30.06.16

Tigerair Taiwan [IT/TTW 'Smartcat']

B-50016	A320-232	7203	ex F-WWJL, dd 27.06.16, lsd fr ICBC Leasing
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Air Canada [AC/ACA]

C-FKSV	787-9	37170	dd 29.06.16, Charleston #128, st GECAS & lsd back, fleet # '843'
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Air Canada rouge [RV/ROU 'Rouge']

C-GHLK	767-35HER	26388	ex VH-BZM, dd 31.05.16, lsd fr CIT Aerospace, reg'd 29.07.16
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Air Georgian (Air Canada Express) [ZX/GGN]

C-GKEZ	Canadair RJ200LR	7327	ex N583ML, reg'd 27.07.16, lsd fr GECAS
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Air Nunavut

C-FCGW	Beech 200	BB-207	badly damaged 17.07.16 in gear up landing at Iqaluit
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Air Tunilik

C-GRDC	PC-12/45	214	ex PT-TG, reg'd 12.07.16
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Buffalo Airlines [BFL]

C-FBAQ	L-188A(PF)	1039	cnvrt'd to water bomber 05.16 at Red Deer, tanker # '417', named in Memory of Arnie Schreder
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We welcome any feedback on this listing.

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

Canadian North [5T/MP/E 'Empress']				
C-GRGI	DHC-8 106	304	ret to Avmax Aircraft Leasing after lease 22.07.16	
Jazz Aviation (Air Canada Express) [QK/JZA]				
C-GJZY	DHC-8 402	4529	dd 04.07.16	
KF Cargo [KW/KFA]				
C-GKFB	DC-10 30(F)	46949	seen being b/u at Hamilton 15.06.16	
C-GLKF	727-227(F)	21118	b/u Hamilton 06.16	
C-GKNF	727-227(F)	20839	b/u Hamilton 16.06.16	
PAL Airlines [PB/PVL 'Starlite']				
C-GNCF	DHC-8 311	244	ex PH-ACQ, reg'd 11.07.16	
Regional 1 Airlines				
C-FJXB	Canadair RJ700	10004	ex N1RL, reg'd 15.07.16, lsd fr Avmax Aircraft Leasing	
Sunwest Aviation [CNK]				
C-GSHV	SA227-DC	DC-900B	ferried Calgary – Nashua 20.07.17, reg'n canx 26.07.16, N3533Q is assigned	
C-GSHZ	SA227-DC	DC-887B	ferried Calgary – Nashua 21.07.16, reg'n canx 26.07.16, rr N3532Q to Aeroptic LLC 28.07.16	
LATAM Airlines Chile [LA/LAN]				
CC-BEL	A321-211	7176	ex D-AVZB, dd 15.06.16, reg'd to Paal Aquila	
Orbest [60/OBS]				
CS-TRX	A330-223	802	ret to CIT Aerospace 06.16 after lease	
Portugália [NI/PGA]				
CS-TPR	E190-100LR	19000460	ex PP-PJP, dd 06.16, sub-lsd fr Azul, ops as TAP Express	
Amazonas del Uruguay				
CX-SDU	Canadair RJ200LR	7209	ex CP-2969, dd 06.16, sub-lsd fr Amazonas	
Bahamasair [UP/BHS 'Bahamas']				
C6-BFJ	DHC-8 311	323	ferried Nassau – North Bay 08-09.06.16 for storage	
C6-BFV	ATR 42-600	1209	ex F-WWLM, dd 28.06.16	
airberlin [AB/BER]				
D-ABCU	A321-211	7171	ex D-AZAM, dd 14.06.16	
Avanti Air [ATV]				
D-AGPH	Fokker 100	11308	wet lsd to Norwegian Air Shuttle 01.07-31.07.16	
EAT Leipzig [QY/BCS 'Eurotrans']				
D-ALES	757-208(F)	29442	ex N294DH, dd 29.06.16, ferried Dothan – Leipzig 28-29.06.16 as N294DH	
Eurowings [EW/EWG]				
D-AEWI	A320-214	7210	ex D-AWW, dd 21.06.16, lsd fr Lufthansa	
D-AEWJ	A320-214	7216	ex D-AVWX, dd 27.06.16, lsd fr Lufthansa	
D-AXGD	A330-203	573	ex B-16305, dd 05.16, lsd fr GECAS	
Lufthansa [LH/DLH]				
D-AIUV	A320-214	7174	ex D-AVU, dd 13.06.16	
Lufthansa CityLine [CL/CLH 'Hansaline']				
D-ACNJ	Canadair RJ900LR	15249	ex C-GZOX, dd 13.05.16, lsd fr Lufthansa	
D-ACNK	Canadair RJ900LR	15251	ex C-GIBL, dd 26.05.16, lsd fr Lufthansa	
D-AEBN	E190-200LR	19000532	lrd 01.04.16, ret to Lufthansa 06.16 after lease	
Aeronova [OVA]				
EC-LYZ	ATR 42-300	226	ex OY-EDN, dd 04.06.16, lsd fr Nordic Aviation Capital, op for Air Europa all white	
Air Europa [UX/AEA]				
EC-MIH	787-8	36413	dd 16.06.16, st SMBC Aviation Capital on delivery & lsd back, Charleston #125	
EC-MJU	737-85P	60584	dd 29.06.16	
Alba Star [AP/LAV]				
YL-LCT	A320-214	2233	ex VP-BWM, dd 10.06.16 Manchester – Milan MXP, sub-lsd fr SmartLynx Airlines	
Canaryfly [PM/CNF]				
EC-LYZ	ATR 42-300	226	ret to Nordic Aviation Capital after lease	
Evelop Airlines [ES/EVE 'Evelop']				
EC-MKT	A330-223	802	ex CS-TRX, dd 06.16, lsd fr CIT Aerospace	
Iberia [IB/IBE]				
EC-MKJ	A330-202	1728	ex F-WWKL, dd 29.06.16, named 'Montevideo'	
EC-MLB	A330-202	1736	ex F-WWYR, dd 29.07.16	

Vueling [VY/VLG]				
EC-LRG	A320-214	1516	ex F-WWIK, dd 07.07.16	
EC-MKV	A319-111	3102	ex EI-EPU, dd 23.06.16 Dublin – Barcelona, lsd fr SMBC Aviation Capital	
EC-MMH	A321-231	7152	ex D-AVXS, dd 15.06.16	
EC-MMU	A321-231	7218	ex D-AVZW, 13.07.16	
LY-VEO	A320-233	558	ex 5B-DCQ, dd 15.06.16, wet sub-lsd fr Avion Express	
LY-VEV	A320-211	211	ex M-YRGW, dd 28.06.16, wet-lsd fr Avion Express	
Aer Lingus [EI/EIN 'Shamrock']				
EI-EPU	A319-111	3102	ret to SMBC Aviation Capital after lease, reg'n canx 21.06.16	
EI-FNJ	A320-216	3174	ex EC-KFI, corrects reg'd	
ASL Airlines Ireland [ABR 'Contract']				
EI-SLL	ATR 72-212	387	cnvrted to ATR 72-212(F) & st Sprint Air	
CityJet [WX/BCY 'City-Ireland']				
EI-FPH	Canadair RJ900LR	15409	ex C-GZUY, dd 14.06.16, lsd fr Trident Jet (Jersey) (Falko), op for SAS, named 'Bikke Viking'	
EI-FWB	RRJ-95B	95108	ex I-PDWW, dd 01.07.16	
OY-RUO	ATR 42-500	514	ex OY-CIL, dd 06.16, wet-lsd fr Danish Air Transport	
Ryanair [FR/RYR]				
EI-EFL	737-8AS	37534	lrd 10.06.16, ferried Prestwick – East Midlands 01.07.16 in basic cls	
Norwegian Air International [D8/IBK 'Nortrans']				
EI-FJP	737-8JP	42077	dd 06.06.16	
EI-FJS	737-8JP	41153	dd 29.06.16	
Stobart Air [RE/STK 'Stobart']				
EI-FSK	ATR 72-600	1326	ex F-WWEI, dd 14.06.16, lsd fr Nordic Aviation Capital	
LY-DAT	ATR 42-500	445	ex F-WKVF, dd 01.07.16, wet lsd fr DOT LT for use on Aer Lingus flights	
Aircompany Armenia				
EK73786	737-7CT	35086	ex C-FCWJ, dd 14.07.16, lsd fr Air Lease Corp, ferried Kelowna – Tbilisi 19-20.07.16	
Maritime Air				
EK72928	An-72 100	3.66E+10	ex UR-CFI, reg'd 04.02.16	
RUS Air (Reliable Unique Services Aviation LLC)				
EK74956	An-74-200	3.65E+10	ex (N462HA), reg'd 04.05.15	
South Airlines [STH]				
EK32709	An-32A	1709	reg'n canx 07.05.15, reportedly became EY-324 of Kush Airlines	
Fly One [5F/FIA 'Fia Airlines']				
ER-AXO	A320-231	357	ex EX32004, dd 02.06.16, sub-lsd fr Sky Prim Air	
Ethiopian Airlines [ET/ETH]				
ET-ATL	787-8	34505	ex N1789B, dd 29.06.16, st AWAS on delivery & lsd back, named 'Colonel Robinson'	
ET-ATQ	A350-941	40	ex F-WZGM, dd 28.06.16, lsd fr AerCap, named 'Simien Mountains'	
Air Manas [ZM/MBB]				
EX-37802	737-82R	35699	ex TC-AAI, dd 08.06.16 Istanbul SAW – Almaty, lsd fr Pegasus, named 'Bubasara'	
ASL Airlines France [50/FP0]				
F-GZTB	737-33V(F)	29336	ret fr Air Austral lease	
French Blue [FBU]				
F-HPUJ	A330-323E	1727	ex F-WWKA, dd 03.06.16, lsd fr Groupe Dubreuil	
Hop! [A5/RLA 'Airliner']				
F-GRGR	ERJ 135ER	145236	lrd 27.05.16, reg'n canx 28.06.16, pwfu	
BA CityFlyer [CJ/CFE]				
G-LCYW	E190-100SR	19000163	dd 31.05.16, ferried Warsaw – London City 10.06.16 for eis	
G-LCYX	E190-100SR	19000178	ex PP-PJK, reg'd 12.07.16, lsd fr Jetscape, ferried Manchester – Warsaw 11.07.16 for mods prior to eis	
Blue Islands [SI/BCI]				
G-ISLG	ATR 42-320	19	ferried Guernsey – Kemble 28.07.16 & pwfu	
G-ISLJ	ATR 42-320	378	ex HR-AXN, reg'd 15.07.16, lsd fr Nordic Aviation Capital, currently parked at Zagreb	
British Airways [BA/BAW 'Speedbird']				
G-XLEL	A380-841	215	ex F-WWAL, dd 22.06.16	



Boeing 737-85N B-7976 (c/n 61428) was delivered to Shandong Airlines on August 1.
JOE G WALKER



Air Europa Boeing 737-85P EC-MJU (c/n 60584) is a recent addition to the Spanish carrier's fleet and visited Amsterdam/Schiphol on July 21. ASHLEY FRENCH



G-ZBKX	787-9	38624	ex N1792B, dd 29.06.16
G-ZBKK	787-9	38627	dd 22.06.16

CargoLogicAir [P3/CLU 'Firebird']			
G-CLAB	747-83QF	60119	ex N841BA, reg'd 30.06.16, lsd fr Volga-Dnepr Group

DHL Air [D0/DHK 'World Express']			
G-BIKR	757-236(F)	22189	ex D-ALEF, reg'd 21.07.16
G-DHKB	757-256(F)	29312	ex N932DH, reg'd 27.07.16, ferried Cecil Field – East Midlands 29.07.16

Eastern Airways [T3/EZE 'Eastflight']			
G-CIXW	E170-100LR	17000230	ex 5Y-KYH, reg'd & dd 21.07.16 Exeter – Humberside, lsd fr GECAS

easyJet [J2/EZY 'easy']			
G-EZPK	A320-214	7177	ex F-WWIR, dd 13.06.16
G-EZPL	A320-214	7183	ex F-WWBX, dd 14.06.16
G-EZPO	A320-214	7243	ex F-WWIB, dd 22.07.16

RVL Aviation [REV 'Endurance']			
G-RVLW	Cessna F406	F406-0052	ex N6590Y, reg'd 14.07.16
G-RVLX	Cessna F406	F406-0054	ex N6591R, reg'd 14.07.16
G-RVLY	Cessna F406	F406-0034	ex N861FT, reg'd 14.07.16

Thomas Cook Airlines [MT/TCX]			
CS-TFZ	A330-243	1008	ex F-WWYD, dd 26.06.16, sub-Isd fr HiFly

Thomson Airways [BY/TOM]			
G-TUIJ	787-9	44578	dd 27.06.16, lsd fr TUI Travel, Charleston #126

Virgin Atlantic Airways [VS/VIR]			
G-VFAN	787-9	37977	ex N9676N, dd 10.06.16, 'named 'Pin Up Girl', Charleston #122
G-VWKD	A304-642	706	lrf 17.06.16, ret to lessor, reg'n canx 04.07.16, exported to US

Wizz Air [W6/WZZ]			
HA-LXF	A321-231	7155	ex D-AVAT, dd 15.06.16
HA-LXG	A321-231	7182	ex D-AVZF, dd 24.06.16
HA-LXH	A321-231	7217	ex D-AVZV, dd 15.07.16

Swiss Global Air Lines [LX/SWU 'Euroswiss']			
HB-JNE	777-3DEER	44586	dd 21.06.16, op for Swiss International Air Lines

Skywork Airlines [SX/SRK 'Skyfox']			
OE-LIR	Do.328-110	3115	dd 06.16, lsd fr Welcome Air

Dominican Wings [DWI]			
HI968	A320-233	561	ret to Avion Express after lease

Avianca – Aerovías del Continente Americano [AV/AVA]			
N266CT	A319-112	2662	lrf 23.05.16, ferried Bogota – Kansas City MCI 03.06.16 for storage & lease return

SATENA [9R/NSE]			
HK-4747	ATR 42-500	526	ret to KA1 P/S (Nordic Aviation Capital) after lease, reg'n canx 23.06.16

Eastar Jet [ZE/ESR]			
HL8058	737-86J	37770	ex D-ABMI, dd 01.07.16, lsd fr MC Aviation Partners

Jeju Air [7C/JJA]			
HL8064	737-BAS	37532	ex EI-EFB, dd 05.07.16, lsd fr SMBC Aviation Capital

Jin Air [LJ/JNA]			
HL8017	737-BSH	42055	dd 29.06.16, sub-Isd fr Korean Air

Korean Air [KE/KAL]			
HL7404	747-4B5	26409	ferried Seoul GMP – Hong Kong 03.06.16, st Max Air
HL7472	747-4B5	26403	lrf 08.02.16
HL7637	747-8B5	40909	dd 27.06.16
HL8042	777-3B5ER	60376	dd 28.06.16
HL8075	777-FEZ	62631	ex N5014K, dd 24.06.16, lsd fr Hong Kong International Aviation Leasing

T'Way Air [TW/TWB 'Teeway']			
HL8070	737-BAS	37535	ex EI-EFM, dd 13.07.16, lsd fr SMBC Aviation Capital

Copa Airlines [CM/CMP]			
HP-1853CMP	737-BV3	41454	ex N1796B, dd 28.06.16

Helicópteros Personales [BLM 'Heli Per']			
HP-17BL	Jetstream 3101	635	ex N10UP

Nok Air [DD/NOK]			
HS-DQG	DHC-8 402	4528	ex C-FNXF, dd 07.07.16, named 'Nok Suk San'

Thai AirAsia [FD/AIQ 'Thai Asia']			
HS-BBW	A320-216	7164	ex F-WWBK, dd 16.06.16, st SMBC Aviation Capital & lsd back via AirAsia

flynas [XY/KNE 'Nas Express']			
TC-FHB	A320-214	3025	ex D-AAAP, dd 29.05.16, sub-Isd fr Freebird Airlines
TC-FHC	A320-214	3852	ex F-HBII, dd 29.05.16, sub-Isd fr Freebird Airlines

Saudia – Saudi Arabian Airlines [SV/SVA]			
HZ-AIV	747-468	28339	ferried Jeddah – Kemble 28.06.16 & pwfu
HZ-AIX	747-468	28341	ferried Jeddah – Kemble 06.06.16 & pwfu

Blue Panorama Airlines [BV/BPA]			
EI-CSI	737-8AS	29924	ex VP-BPG, dd 01.07.16, lsd fr CIT Aerospace
Meridiana [IG/EEZ 'Merair']			
EI-FNW	737-86N	28642	ex LN-NOM, dd 08.06.16, lsd fr Genesis Ireland
EI-FSJ	737-86N	29888	ex N546CC, dd 07.07.16, lsd fr Apollo Aviation, named 'città di Bergamo'

MiniLiner			
9H-MTT	F-27 500	10378	ex I-MLIT, reg'd 06.16
9H-MUT	F-27 500	10369	ex I-MLUT, reg'd 06.16

Amakusa Airlines [MZ/AHX 'Amakusa Air']			
JA81AM	DHC-8 103	537	rr OY-YBG to Nordic Aviation Contractor (Ireland) 13.07.16, stored at Billund

ANA – All Nippon Airways [NH/ANA]			
JA13AN	737-781ER	33880	ferried Tokyo HND – Tucson 05.07.16, st Werner Aerospace & pwfu

ANA Wings [EH/AXX 'Alfa Wing']			
JA8419	737-54K	27430	lrf 31.05.16, ferried Tokyo HND – San Bernardino 14-15.06.16 & pwfu

Fuji Dream Airlines [JH/FDA]			
JA11FJ	E170-200LR	17000526	ex PR-ESX, dd 09.06.16, lsd fr Suzuyo & Co

Ibex Airlines [FW/IBX]			
JA12RJ	Canadair RJ702ER	10345	ex C-GWFQ, dd 28.06.16

J-Air [JL/JLJ 'Jal Bird']			
JA242J	E190-100STD	19000712	ex PR-ESZ, dd 24.06.16

Japan Air Commuter [3X/JAC 'Commuter']			
JA847C	DHC-8 402	4111	N511UA is assigned

Japan Airlines [JL/JAL]			
JA708J	777-246ER	32895	purch off lease & reg'd 28.06.16
JA731J	777-346ER	32431	purch off lease & reg'd 23.06.16
JA845J	787-8	34857	dd 29.06.16, Charleston #127
JA8398	767-346	27312	N572UA is assigned
JA8941	777-346	28393	pwfu at San Bernardino, totally gutted airframe
JA8943	777-346	28395	wfu at San Bernardino, all white minus engines
JA8982	777-246	27365	as JA8941
JA8983	777-246	27366	as JA8941

Hunnu Air [MR/MMI 'Trans Mongolia']			
JU-8801	ATR 72-212A	774	ex OY-YBK, dd 08.07.16, lsd fr Nordic Aviation Capital

Norwegian Air Shuttle [DY/NAX 'Nor Shuttle']			
LN-KKW	737-3K9	24213	reg'n canx 28.06.16, is preserved at Norwegian Aviation Museum at Bodo

Austral Líneas Aéreas [AU/AUT]			
LV-GIK	E190-100AR	19000715	ex PR-ETQ, dd 26.06.16

LATAM Airlines Argentina [4M/DSM]			
LV-GLP	A320-233	1355	ex CC-COF, dd 19.06.16, lsd fr LATAM Chile

Avion Express [X9/NVD 'Nordvind']			
HI968	A320-233	561	ret fr Dominican Wings lease

Air Lubo / ALK Airlines [VBB 'Air Lubo']			
LZ-FDD	Fokker 100	11337	ex P.J-DAC, dd 05.16, ferried Varna – Tehran 16.06.16

Air Via [VL/VIM 'Crystal']			
LZ-MDO	A320-214	879	ex SX-BDS, dd 08.06.16 Sofia – Varna

BH Air [8H/BGH 'Balkan Holidays']			
LZ-BHK	A321-211	1554	ex EI-FSB, dd 24.06.16

ABX Air [QB/ABX 'Abex']			
N749AX	767-232(F)	22226	ret to Cargo Aircraft Management after lse, lsd to Amazon & sub-Isd back to ABX Air 02.06.16

Aero-Flite			
N635AC	BAe Avro RJ85	E2330	ex EI-RJB, reg'd 05.07.16

Alaska Airlines [AS/ASA]			
N247AK	737-990ER	36364	dd 08.06.16

N248AK	737-990ER	62469	ex N1795B, dd 27.06.16
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N779AS	737-408	25111	ret to lessor & st Vx Capital Partners 20.06.16 & reg'd to V67A-734 LLC, std Tucson
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Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	cls
cn	manufacturer's construction/serial number
cnvrt	converted
dbf	destroyed by fire
dbf	damaged beyond repair
dd	delivery date
ex	previous reg'n
ff	first flight
frtr	freighter
lrf	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
st	std
std	stored
tba	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed



We welcome
any feedback
on this listing.

(The listing is alphabetical with reference to the registration, type, construction number and notes.)

American Airlines [AA/AAL]

N164NN	A321-231	6909	ex F-WZMD, dd 24.06.16, fleet # '896'
N165NN	A321-231	6956	ex F-WZME, dd 30.06.16, fleet # '897'
N988AL	A321-231	7154	ex D-AVXT, dd 17.06.16, fleet # '988'
N992NN	737-823	31244	dd 07.06.16, fleet # '3NM'
N993NN	737-823	33340	dd 21.06.16, fleet # '3NM'
N352AA	767-323ER	24033	st Jetran LLC 01.06.16
N357AA	767-323ER	24038	as N352AA
N359AA	767-323ER	24040	as N352AA
N370AA	767-323ER	25197	as N352AA
N372AA	767-323ER	25199	as N352AA
N378AN	767-323ER	25447	as N352AA, then to Cargo Aircraft Management 29.06.16, ferried Roswell – Wilmington ILN 13.07.16, reportedly for use as spares
N39364	767-323ER	24045	as N352AA
N454AA	DC-9 82	49559	reg'n canx 28.06.16, pwfu at Roswell
N467AA	DC-9 82	49597	lrf 01.06.16, ferried Dallas DFW – Roswell same day & pwfu
N475AA	DC-9 82	49650	lrf 01.06.16, ferried Dallas DFW – Tulsa 02.06.16, Tulsa – Roswell 09.06.16 for storage
N476AA	DC-9 82	49651	st AeroThrust Holdings Leasing LLC 15.06.16
N478AA	DC-9 82	49653	as N476AA
N558AA	DC-9 82	53088	as N476AA
N560AA	DC-9 82	53090	as N476AA
N561AA	DC-9 82	53091	as N476AA
N574AA	DC-9 82	53151	as N476AA
N583AA	DC-9 82	53160	as N476AA
N585AA	DC-9 82	53248	as N476AA
N595AA	DC-9 83	53285	st AeroThrust Holdings Leasing LLC 26.05.16
N9407R	DC-9 83	49400	as N595AA

CommutAir [C5/UCA]

N14198	ERJ 145XR	14500951	ex PT-SCZ, dd 06.06.16, sub-Isd fr United Airlines
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Delta Air Lines [DL/DAL]

N304DN	A321-211	7112	ex D-AZAO, dd 30.06.16, fleet # '3004'
N305DN	A321-211	7149	ex D-AVXR, dd 09.06.16, fleet # '3005'
N829NW	A330-302	1721	ex F-WWYY, dd 23.06.16, reg'd to Wells Fargo Bank Northwest same day
N860DN	737-932ER	31971	dd 29.06.16, fleet # '3860'
N519US	757-251	23207	seen wfu at Blytheville 21.05.16 minus all useful parts
N533US	757-251	24264	as N519US
N534US	757-251	24265	as N519US
N612DL	757-232	22819	as N519US
N654DL	757-232	24394	ferried Marana – Cecil Field 12.06.16 for mods prior to return to service
N750AT	757-212	23126	as N519US
N751AT	757-212	23125	as N519US
N757AT	757-212	23127	as N519US
N130DL	767-332	24080	ferried Atlanta – Blytheville 27.06.16 & pwfu
N478DN	DC-9 82	53004	stripped fuselage seen at Blytheville 21.05.16 in basic SAS cls
N495DN	DC-9 82	53365	as N478DN
N647BC	E190-100AR	19000146	ex C-FNAQ, bf Boeing 15.06.16
N648BC	E190-100AR	19000022	ex C-FGLW, bf Boeing 15.06.16
N305EV	MD-90 30	53601	seen wfu at Blytheville 21.05.16 minus all useful parts
N306EV	MD-90 30	53568	as N305EV
N307EV	MD-90 30	53571	as N305EV
N308EV	MD-90 30	53567	as N305EV
N309EV	MD-90 30	53572	as N305EV
N312EV	MD-90 30	53574	ex B-17920, bf EVA Air & reg'd 20.07.16, pwfu Blytheville for spares

Delux Public Charter (JetSuiteX) [XE]

N719AE	ERJ 135LR	145276	ex PT-SJS, dd 12.05.16, to be rr N252JX, updates previous sections
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N728AE	ERJ 135LR	145328	ex PT-SMU reg'd 08.07.16 to Bank of Utah, ferried Centralia – Bradley 05.07.16 for eis
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Envoy Air (American Eagle) [MQ/ENY]

N234JW	E170-200LR	17000566	ex PR-EYS, dd 28.06.16, Isd fr American Airlines
N636AE	Emb-14LR	145160	ret to American Airlines 05.16 after lease
N637AE	ERJ 145LR	145170	ret to American Airlines 06.16 after lease
N709GB	ERJ 135LR	145211	ret to lessor, rr N256JX to Wells Fargo Bank Northwest 05.07.16
N718AE	ERJ 135LR	145275	ret to lessor, ferried Kingman – Centralia 20.05.16, rr N254JX to Wells Fargo Bank Northwest 07.07.16
N729AE	ERJ 135LR	145343	ret to lessor, rr N255JX to Wells Fargo Bank Northwest 05.07.16

FedEx Express [FX/FDX 'FedEx']

N774FD	757-222	26709	ferried Victorville – Singapore XSP 06-09.06.16 for cargo conversion
N799FD	757-222	28145	ferried Victorville – Mobile BFM 16.06.16 for cargo conversion
N134FE	767-3S2F	43550	ex N5511V, dd 03.06.16
N135FE	767-3S2F	42722	dd 10.06.16
N137FE	767-3S2F	61206	dd 29.06.16
N68091	MD-11F	48757	ex PH-MCU, reg'd 13.07.16

Frontier Airlines [F9/FFT]

N710FR	A321-211	7179	ex D-AZAD, dd 16.06.16, st AFS Investments 68 LLC (GECAS) on delivery & Isd back, named Fallon the Falcon
N711FR	A321-211	7184	ex D-AVZG, dd 28.06.16, st Wells Fargo Bank Northwest on delivery & Isd back, named Powder the Polar Bear

Gulf & Caribbean Cargo

N841FL	Canadair RJ200ER	8064	ex EC-JOY, reg'd 05.07.16
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Kalitta Air [K4/CKS 'Connie']

N539BC	747-4B5(BCF)	26395	ex HL7485, bf Boeing 06.06.16, ferried Marana – Oscoda 10.06.16
N976BA	747-4B5(BCF)	25275	bf Boeing & ferried Marana – Oscoda 01.07.16

Kenmore Air [KEN 'Kenmore']

N188JG	DHC-2 Mk.I	1103	reg'n canx 05.07.16, exported to Canada
N709KA	DHC-3T	410	ex C-FVYV, reg'd 25.07.16

Mesa Airlines [YV/ASH 'Air Shuttle']

N88341	E170-200LR	17000563	ex PR-ESN, dd 06.06.16, United Express cls
N89342	E170-200LR	17000570	ex PR-ETK, dd 22.06.16, United Express cls

Piedmont Airlines (American Eagle) [PT/PDT]

N636AE	Emb-14LR	145160	dd 13.05.16, Isd fr American Airlines
N637AE	ERJ 145LR	145170	dd 22.06.16, Isd fr American Airlines

PSA Airlines (American Eagle) [OH/JIA 'Blue Streak']

N595NN	Canadair RJ900LR	15408	ex C-GZUJ, dd 08.06.16, Isd fr American Airlines
N596NN	Canadair RJ900LR	15411	ex C-GWFD, dd 29.06.16, Isd fr American Airlines
N597NN	Canadair RJ900LR	15412	ex C-GWFX, dd 30.06.16, Isd fr American Airlines

Republic Airlines [YX/RPA 'Brickyard']

N638RW	E170-100SE	17000053	ex PT-SUY, dd 01.06.16, Isd fr Shuttle America
N643RW	E170-100SE	17000060	ex PT-SVL, dd 01.06.16, Isd fr Shuttle America
N646RW	E170-100SE	17000066	ex PT-SVR, dd 06.06.16, Isd fr Shuttle America
N654RW	E170-100SE	17000104	ex PT-SAK, dd 06.06.16, Isd fr Shuttle America

Shuttle America [S5/TCF 'Mercury']

N258JQ	ERJ 145LR	145768	st CIT Aerospace 13.06.16, is std at Kingman
N565RP	ERJ 145LR	145679	as N258JQ
N576RP	ERJ 145LR	14500856	ferried Nashville – Kingman 01.06.16 for storage

SkyWest Airlines [OO/SKW]

N160SY	E170-200LR	17000568	ex PR-ETG, dd 20.06.16, United Express cls
N161SY	E170-200LR	17000569	ex PR-ETH, dd 20.06.16, United Express cls
N179SY	E170-200LR	17000565	ex PR-ESW, dd 09.06.16, Alaska Airlines cls

Southwest Airlines [WN/SWA]

N7841A	737-7L9	28015	ferried Paine Field – Phoenix 24.07.16 for eis
N7874B	737-7Q8	29352	ferried Paine Field – Phoenix 30.06.16 for eis
N8690A	737-8H4	36916	dd 24.06.16



Stansted-based cargo
operator CargoLogicAir
displayed its new
Boeing 747-830F
G-CLAB (c/n 60119)
at the Farnborough
International Airshow.

KEY-JAMES RONAYNE



The sun glistens on KLM's latest Boeing 787-9 Dreamliner PH-BHH (c/n 38767) as it rests on the ramp following its delivery flight. TON JOCHEMS



Spirit Airlines [NK/NKS 'Spirit Wing']

N644NK	A320-232	7156	ex F-WWIE, dd 08.06.16
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Trans States Airlines [AX/LOF 'Waterski']

N811HK	ERJ 145LR	145256	now Trans States titles 06.16, was United Express
N853HK	ERJ 145MP	145407	ferried St. Louis – Kingman 01.07.16 for storage
N855HK	ERJ 145LR	145387	ferried St. Louis – Kingman 14.06.16 for storage
N856HK	ERJ 145MP	145441	ferried St. Louis – Kingman 14.06.16 for storage

United Airlines [UA/UAL]

N890UA	A320-214	2815	ex B-6220, dd 01.07.16, lsd fr AerCap, ferried Shenyang – Salt Lake City 06.07.16 for refit
N76532	737-824	62749	dd 14.06.16, fleet # '0532'
N76533	737-824	62748	dd 29.06.16, fleet # '0533'
N565UA	757-222	26669	st Unical Aviation 25.05.16, pwfu San Bernardino
N26966	787-9	60143	dd 24.06.16, fleet # '0966'
N26967	787-9	60144	ex N10187, dd 21.06.16, fleet # '0967'

Virgin America [VX/VRD 'Redwood']

N365VA	A320-214	7207	ex F-WWDS, dd 23.06.16
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Wings of Lebanon [W7/WLB]

TC-TLH	737-8K5	27984	ex D-AHFI, dd 29.06.16, sub-isd fr Tailwind Airlines
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Austrian Airlines [OS/AUA]

D-AICH	A320-214	971	ex F-WWBY, dd 15.05.16, wet lsd fr Condor
OE-LWL	E190-200LR	19000532	ex D-AEBN, dd 13.06.16, lsd fr Lufthansa

Eurowings Europe [E2/EWE]

OE-IEU	A320-214	6953	ex D-AEWA, dd 20.06.16, lsd fr GECAS
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MJET [JAG]

OE-IBB	Fokker 100	11403	reg'n canx 06.16, has been std at Bratislava
OE-IDD	Fokker 100	11368	reg'n canx 06.16

Niki [HG/NLY 'flyniki']

D-ABNJ	A320-214	5522	ex OE-LER, dd 07.06.16, lsd fr/op by airberlin
OE-LEW	A321-211	4611	ferried Vienna – Tianjin 06.06.16, reg'n canx 06.16

Finnair [AY/FIN]

OH-LQA	A340-311	58	ferried Helsinki – Roswell 08.06.16 and pwfu
OH-LWF	A350-941	28	ex F-WZFW, dd 24.06.16

Travel Service Airlines [OS/TVS 'Skytravel']

TS-INP	A320-214	1597	ex SU-KBD, dd 30.05.16, sub-isd fr Nouvelair Tunisie
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Brussels Airlines [SN/BEL 'Beeline']

G-RJXI	ERJ 145EP	145454	ex PT-SUZ, dd 11.06.16, lsd fr/op by bmi Regional
OO-SSS	A319-111	2030	ex OE-IEF, dd 20.07.16, lsd fr GECAS

Danish Air Transport [DX/DTR 'Danish']

OY-RUG	ATR 72-202	509	ret fr Stobart Air wet lse
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TUI Airlines Nederland [OR/OTF]

N732MA	737-81Q	30618	ex D-AXLI, sub-isd wet from Miami Air International
N733MA	737-81Q	30619	ex D-AXLJ, sub-isd wet from Miami Air International

Corendon Dutch Airlines [CND 'Dutch Corendon']

CS-TQU	737-8K2	30646	ex PH-HZY, wet lsd fr EuroAtlantic Airways
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KLM Cityhopper [WA/KLC 'City']

PH-EXH	E170-200STD	17000564	ex PR-ESV, dd 17.06.16, fleet # 'EXH-564'
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K.L.M. Royal Dutch Airlines [KL/KLM]

PH-AOK	A330-203	834	rr 2-PAOK to Whitney Leasing (AerCap) 25.05.16
PH-BHG	787-9	38766	dd 29.06.16, lsd fr AerCap, fleet # 'HG-008'
PH-BVR	777-306ER	61603	dd 15.06.16, lsd fr Air Lease Corp, fleet # 'VR-036'

Transavia Airlines [HV/TRA]

C-GDEJ	737-73V	32427	ex G-EZKF, dd 18.07.16, wet lsd fr Enerjet
PH-HXD	737-8K2	61791	dd 06.06.16, lsd fr BOC Aviation
PH-HXE	737-8K2	61790	dd 15.06.16, lsd fr BOC Aviation

Batik Air [ID/BTK]

PK-LAZ	A320-214	7160	ex F-WWBI, dd 30.06.16, lsd fr Lion Air
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Citilink Indonesia [QG/CTV 'Supergreen']

PK-GQO	A320-214	7221	ex F-WTUD, dd 28.06.16, lsd fr BOC Aviation
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Garuda Indonesia [GA/GIA]

PK-GAO	ATR 72-600	1329	ex F-WTDT, dd 28.06.16, lsd fr Nordic Aviation Capital
PK-GEI	737-86N	29883	ret to GECAS 06.16 after lease

Sriwijaya Air [SJ/SJY]

PK-CMT	737-86N	29883	ex PK-GEI, dd 01.07.16, lsd fr GECAS, named 'Berbajti'
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Azul Linhas Aéreas [AD/AZU]

PP-PJK	E190-100LR	19000178	ret to Jetscape 07.16 after lease
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PP-PJU	E190-100LR	19000541	ferried Porto Alegre – Alverca 26-28.06.16 for paint into TAP Express cls
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GOL Transportes Aéreos [G3/GLO]

N739AC	737-8EH	40744	dd 03.06.16, reg'd to Bank of Utah, ferried Boeing Field – Lake Charles 03.06.16 for temp storage
PR-GGA	737-8EH	35063	lrf 11.01.16, ret to lessor 06.16 after lease
PR-GTY	737-8EH	34273	lrf 22.05.16, ret to lessor 07.16 after lease
PR-GTZ	737-8EH	34274	lrf 07.05.16, ret to lessor 07.16 after lease

LATAM Airlines Brasil [JJ/TAM]

PR-MYW	A320-214	5240	lrf 14.06.16, ferried São Paulo CGH – Abu Dhabi 23-26.06.16 for end of lease checks
PT-MVL	A330-203	700	lrf 30.03.16, ferried Belo Horizonte CNF – Abu Dhabi 10-13.06.16 for end of lease checks
PT-MVS	A330-223	1112	lrf 14.02.16, ferried Belo Horizonte CNF – México City 14.06.16 for end of lease checks
PT-MZE	A319-132	1103	ferried Belo Horizonte CNF – Kemble 22-27.07.16 & pwfu

Aurora Airlines [HZ/SHU]

RA-73013	737-5L9	28721	ferried to Tallinn 09.06.16 for storage & lease return
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IrAero [RD/IAE]

RA-47821	An-24RV	1.73E+08	ex C/P-47821, seen Novosibirsk 20.02.16
RA-89002	RRJ-95B	95010	dd 09.06.16
RA-89008	RRJ-95B	95016	dd 16.06.16
RA-89010	RRJ-95B	95018	dd 01.07.16

Khabarovsk Avia

RA-46528	An-24RV	47310007	reg'n canx between 25.03-21.04.16, pwfu
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Metrojet [7K/KGL 'Kogalym']

EI-ETH	A321-231	668	lrf 07.10.15, seen std at Istanbul IST 23.06.16
EI-ETK	A321-231	787	lrf 08.12.15, reg'n canx 09.06.16 as wfu

Pioneer Regional Airlines

RA-46614	An-24RV	37308701	ex C/P-46614, lsd fr Buryat Airlines
RA-46637	An-24RV	37308903	ex C/P-46637, lsd fr Izhavia
RA-47315	An-24RV	67310502	ex C/P-47315, lsd fr Izhavia

Rossiya Airlines [FV/SDM]

EI-XLI	747-446	27648	ex N920UN, dd 08.07.16, lsd fr VTB Leasing
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Rossiya SLO

RA-64526	Tu-214SR	43003026	updates c/n
RA-64527	Tu-214SR	44205027	updates c/n
RA-64528	Tu-214SR	42306028	dd 05.16
RA-89039	RRJ-95B VIP	95030	dd 28.06.16
RA-89040	RRJ-95B VIP	95037	dd 30.06.16

UTair Aviation [UT/UTA 'Tjumavi']

VQ-BOM	Canadair RJ200LR	7130	rr N770AV to Wells Fargo Bank Northwest 07.07.16
VQ-BGP	Canadair RJ200LR	7165	rr N710AV to Wells Fargo Bank Northwest 05.07.16
VQ-BGQ	Canadair RJ200LR	7200	rr N718AV to Wells Fargo Bank Northwest 01.07.16
VQ-BGV	Canadair RJ200LR	7378	rr N749AV to Wells Fargo Bank Northwest 05.07.16
VQ-BGX	Canadair RJ200LR	7394	rr N757AV to Wells Fargo Bank Northwest 01.07.16

UTair Cargo [TUM]

RDPL-34177	An-74TK-100	3.65E+11	ex RDPL-34018 Laos Government, to be rr RA-74051
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VIM Airlines [NN/MOV 'Mov Air']

VP-BDW	777-2H6ER	28417	ex 2-MMRJ, dd 14.07.16, lsd fr Novus Aviation Capital
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Yakutia [R3/SYL 'Air Yakutia']

RA-89021	RRJ-95B	95021	dd 10.06.16
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Philippine Airlines [PR/PAL]

RP-C9926	A321-231	7180	ex D-AVZE, dd 21.06.16
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BRA – Braathens Regional [DC/BRX]

SE-LXH	Saab 2000	2000-007	ferried Trollhättan – East Midlands 27.06.16 for paint into Skywork Airlines cls
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SAS Scandinavian Airlines [SK/SAS]

LN-RPT	737-683	28299	ferried Oslo – St Athan 07.06.16 after lease, pwfu
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Small Planet Airlines [P7/LLP 'Skypol']

SP-HAX	A321-211	2903	ferried Budapest – Warsaw 25.07.16 for eis
SP-HAZ	A321-211	3191	ferried Budapest – Warsaw 08.07.16 for eis

SprintAir [HS/SRN]

SP-SPD	ATR 72-212(F)	387	ex EI-SLL, dd 08.07.16 Toulouse Fracanzal – Warsaw
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Ellinair [EL/ELB]

LY-CGC	737-4Y0	23870	ex N870AG, dd 12.06.16, sub-isd fr Grand Cru Airlines
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Key to Abbreviations

a/c	aircraft
als	airlines
awys	airways
bf	bought from
b/u	broken up/scrapped
canx	cancelled
cls	cls
cn	manufacturer's construction/serial number
cnvrt'd	converted
dbf	destroyed by fire
dbf	damaged beyond repair
dd	delivery date
ex	previous reg'n
fi	first flight
frtr	freighter
lrf	last revenue flight
lsd fr	leased from
lsd to	leased to
msn	see cn
ntu	not taken up
oo	on order
op	operated
pax	passenger
pwfu	permanently withdrawn from use
reg'd	registered
reg'n	registration
ret fr	returned from
ret to	returned to
rr	re-registered
rts	return to service
sb	sold by
scr	scrapped/broken up
std	std
std	stored
tha	to be advised
unk	unknown
wfu	withdrawn from use
w/o	written off/destroyed

Thanks to Dave Richardson and LAASI Aviation for the above



We welcome any feedback on this listing.

(The listing is alphabetical with reference to the registration of the country of origin. Columns indicate the registration, type, construction number and notes.)

orange2fly				
SX-ORG	A320-232	1407	ex XY-AGS, dd 29.06.16, lsd fr AerCap	
AnadoluJet [TC/THY]				
TC-JFF	737-8F2	29768	ex N1786B, dd 16.04.16, still named 'Bingöl'	
AtlasGlobal [KK/KKK]				
TC-AGI	A321-231	963	ex TC-OBF, dd 02.07.16, lsd fr AerCap	
TC-AGS	A321-231	1008	ex TC-OBK, dd 06.16, lsd fr AerCap	
MNG Airlines [MB/MNB 'Black Sea']				
TC-MND	A300C4-203	212	rr N212UK to Wells Fargo Bank Northwest 13.07.16	
Onur Air [BO/OHY]				
TC-OBF	A321-231	963	lrf 16.04.16, ret to AerCap 06.16 after lease	
TC-OBK	A321-231	1008	lrf 07.04.16, ret to AerCap 06.16 after lease	
Pegasus Airlines [PC/PGT 'Sun Turk']				
TC-DCL	A320-214	7145	ex F-WWBO, dd 06.06.16, lsd fr CALC	
TC-DCM	A320-214	7200	ex F-WWDO, dd 21.06.16, lsd fr CALC	
Turkish Airlines [TH/THY]				
TC-JTL	A321-231	7166	ex D-AZAK, dd 16.06.16	
TC-JVU	737-8F2	60022	dd 14.06.16	
TC-JVJ	737-8F2	60023	dd 29.06.16	
TC-LJI	777-3F2ER	44130	dd 14.06.16	
TC-LJJ	777-3F2ER	60405	dd 29.06.16	
TC-LKA	777-36NER	41818	ex 5Y-KZZ, dd 04.16, lsd fr GECAS	
TC-LKC	777-3U8ER	42097	ex 5Y-KZX, dd 04.16, lsd fr GECAS	
TC-LNG	A330-303	1718	ex F-WWCD, dd 09.06.16	
SunExpress [XO/SXS]				
TC-SOA	737-8HC	61184	dd 25.06.16	
TC-SOB	737-8HC	61175	dd 16.06.16	
Dart [D4/DAT 'Dartlimited']				
UR-CPE	737-524	28921	ex VP-BYI, dd 22.07.16 Vilnius – Kiev IEV	
Yanair [YE/ANR]				
UR-COJ	A321-112	765	ex XY-AGN, dd 18.07.16 & reg'd to EVN Invest Group	
Alliance Airlines [QQ/UTY 'Alli']				
VH-NKQ	Fokker 70	11572	ex OE-LFR, reg'd 01.07.16 to Alliance Airlines Slovakia S.R.O	
VH-UQW	Fokker 100	11367	ex OE-LVN, reg'd 13.07.16	
Network Aviation Australia				
VH-NHA	Fokker 100	11490	ex OE-LVA, reg'd 21.07.16, lsd fr Qantas	
Virgin Australia Airlines [VA/VOZ]				
VH-PDW	Cv.580(F)	86	C-GKFQ, dd 30.06.16, wet-lsd fr Skyforce Aviation	
VH-YFW	737-8FE	41037	reg'd to Short Haul 2016 No.2 Pty 01.07.16	
VH-ZPG	E190-100AR	19000195	returned after lease, rr N195EM to Wells Fargo Bank Northwest 08.07.16	
VASCO – Vietnam Air Services Co [OV/VFC 'Vasco Air']				
VN-B219	ATR 72-212A	886	ex F-WWEP, seen Ho Chi Minh City 19.06.16 in full cls	
VietJet Air [VJ/VJC]				
VN-A675	A320-214	7167	ex F-WWIM, dd 13.06.16, st AWAS & lsd back on delivery	
VN-A676	A320-214	7170	ex F-WWIN, dd 07.06.16	
Deccan Cargo & Express Logistics [3C/DEC]				
VT-DEA	ATR 72-202(F)	455	rr N455CJ to Texas Aviation Group 08.07.16	
Go Air [G8/GOW]				
VT-WGB	A320-271n	7074	ex F-WWDV, dd 27.06.16, st SMBC Aviation Capital & lsd back	
IndiGo [6E/IGO 'Ifly']				
VT-IDU	A320-232	2457	ex EI-EZG, dd 07.06.16, lsd fr AWAS	
SpiceJet [SG/SEJ]				
VT-SLJ	737-8EH	34273	ex PR-GTY, dd 12.07.16, lsd fr FLY Leasing	
VT-SLL	737-8EH	34274	ex PR-GTZ, dd 12.07.16, lsd fr FLY Leasing	
VT-SLM	737-8EH	35063	ex PR-GGA, dd 03.07.16	
Vistara [UK/VTI]				
VT-TTL	A320-232	7163	ex D-AWS, dd 02.06.16, lsd fr BOC Aviation	
LIAT [LI/LIA]				

V2-LGI	DHC-8 311	325	ferried Antigua – North Bay 14-16.06.16, imported into Canada 04.07.16
Aerolitoral (Aeroméxico Connect) [5D/SLI]			
XA-ALP	E190-100LR	19000138	ex N593CB
XA-TLI	ERJ 145LU	145601	ferried Queretaro – Kemble 17-21.06.16, ret to lessor & st Senator Flugzeuge & Co KG, rr G-CIYX 18.07.16
Aeroméxico [AM/AMX]			
N368AR	737-86J	36880	ex D-ABKS, dd 29.07.16, lsd fr Jackson Square Aviation
Aeronaes TSM [VTM]			
XA-UXI	DC-9 82(F)	49558	ex N453AA
Interjet [4O/AIJ 'ABC Aerolineas']			
XA-MRM	RRJ-95B	95086	ex '97002', dd 19.07.16
Magnicharters [GMT 'Grupomonterrey']			
XA-VAA	737-377	23655	ferried Las Vegas – Mojave 23.06.16 & pwfu
VivaAerobus (Aerolines Nacionales) [VB/VIV]			
XA-VAD	737-3U3	28742	rr N584CB to Wells Fargo Bank Northwest 06.07.16
XA-VAT	A320-232	7043	ex F-WWIC, dd 08.06.16
XA-VAU	A320-232	7153	ex F-WWIL, dd 01.06.16
Volaris [Y4/VOI]			
XA-VLU	A321-231	7196	ex D-AVZM, dd 28.06.16, lsd fr BOC Aviation
Golden Myanmar Airlines [Y5/GMR]			
XY-AGS	A320-232	1407	ret to AerCap 06.16 after lease
Blue Air [OB/BMS 'Blue Messenger']			
LZ-DEO	DC-9 82	48079	ex YR-OTL, dd 06.16, lsd fr Air Lubo
YR-BMB	737-85R	29037	ret fr TUI Airlines Nederland 07.06.16 after lease
YR-BMF	737-808	28220	ex B-2638, dd 24.06.16, lsd fr Aircastle
Airwork Flight Operations [AWK]			
ZK-PAT	737-4Y0(F)	24683	ex N837TM, reg'd 19.07.16
Africa Charter Airline [FSK 'African Sky']			
ZS-MPZ	737-301(F)	23741	ex OY-JTJ
Star Air Cargo [BRH 'Bright Star']			
ZS-TGN	737-3B7(F)	23862	ex ZK-FXT, lsd fr Airwork Flight Operations
Arkia Israeli Airlines [IZ/AIZ]			
4X-EMC	E190-200AR	19000713	ex PR-ETF, dd 09.06.16
TUS Airways [U8/CYF 'Tus Air']			
SE-LTU	Saab 2000	2000-062	ex HB-IVG, reg'd 06.07.16, lsd fr Erik Thun AB
Fastjet [FN/FTZ 'Grey Bird']			
5H-FJC	A319-112	1145	ferried to St Athan 13.06.16, ret to lessor & pwfu
Aero Contractors [AJ/NIG 'Aeroline']			
5N-BPQ	737-4M0	29201	rr N493CS to Wells Fargo Bank Northwest 14.07.16
5N-BQL	737-4M0	29203	rr N496CS to Wells Fargo Bank Northwest 14.07.16
Max Air			
5N-HMM	747-4B5	26409	ex HL7404, dd 02.07.16 Hong Kong – Kano
Air Algérie [AH/DAH]			
7T-VKN	737-8D6	60750	dd 22.06.16
9M-XXP	A330-343E	1481	ex F-WWYX, dd 28.05.16, sub-lsd fr AirAsia X
9M-XXT	A330-343E	1549	ex F-WWKD, dd 28.05.16, sub-lsd fr AirAsia X
Air Horizont [HAT 'Sky Runner']			
9H-HUE	737-430	27003	ex 9H-VLA, dd 29.06.16
Malindo Air [OD/MXD]			
9M-LCC	737-8GP	39836	ex PK-LDE, dd 05.16
9M-LCD	737-8GP	38309	ex PK-LDF, dd 29.06.16
9M-LMS	ATR 72-600	1332	ex F-WWEP, dd 29.06.16, lsd fr Lion Air
9M-LMT	ATR 72-600	1336	ex F-WWET, dd 02.07.16, lsd fr Lion Air
9M-LNZ	737-8GP	38303	dd 27.06.16, lsd fr Lion Air, in Batik Air Malaysia cls
CAA – Compagnie Africaine D'Aviation [BU/FPY 'Africompany']			
9Q-CPB	A320-212	279	rr 2-TGXE to Vallair 10.05.16
Singapore Airlines [SQ/SIA]			
9V-SMD	A350-941	37	ex F-WZGF, dd 30.06.16
9V-STL	A330-343E	1105	lrf 14.03.16, ret to AWAS 05.16 after lease, rr LZ-AWG, ferried Singapore – Shantou 12.05.16



Oman Air's newest jet, Boeing 737-81M A40-BAB (c/n 60392), comes in to land at Boeing Field prior to delivery. JOE G WALKER

The latest news from maintenance, repair and overhaul providers

SR Technics Completes Cabin Modification Programmes

Zurich-based SR Technics has successfully completed two cabin modification programmes for Edelweiss Air and Scandinavian Airlines (SAS). For the Swiss carrier it has reconfigured the cabins of its fleet of six Airbus A320s, including replacing seats, galleys and lavatories. The new layout has allowed an additional seat row to be fitted to each jet. SR Technics also installed wireless Panasonic In-Flight Entertainment (IFE) systems. Meanwhile, the company has also successfully delivered the last of a

12-aircraft cabin modification programme for SAS. In late 2014, SR Technics won a contract to enhance the cabins on the carrier's Airbus A330-300 and A340-300 fleet (see *Airliner World*, October 2015). They now feature new colours and improved ergonomic seats in all classes, mood lighting and an upgraded IFE system that includes Wi-Fi. Some C-checks and full aircraft repainting were also completed during the refurbishment. (Photo SR Technics)



SkyWest and ExpressJet Airlines' Heavy Maintenance

Bombardier Commercial Aircraft has extended heavy maintenance agreements with SkyWest carriers, SkyWest Airlines and ExpressJet Airlines for a further ten years. The two operate a total of 433 CRJ regional jets between them – 234 CRJ200s, 135 CRJ700s and 64 CRJ900 – which are flown on behalf of Delta Air Lines, United Airlines, American Airlines and Alaska Airlines. The work will be

carried out at the Canadian manufacturer's facilities throughout the USA, including its Tucson, West Virginia and Macon Air Centres. Wade Steel, Chief Commercial Officer, SkyWest said: "Bombardier's CRJ Series continues to be essential to our two airlines' fleets and has helped our company become one of the largest regional jet operators in the world." (Photo Bombardier)



FL Technics Diversifies

MRO provider FL Technics has signed a contract with Tunisian start-up Express Air Cargo to provide redelivery checks on two of its Boeing 737-300s.

Both aircraft are currently at the company's maintenance centre in Vilnius, Lithuania, undergoing a series of inspections, overview of the technical documentation, pre-planned checks and thorough structural examination in addition to any necessary repairs. Hassen Aissaoui, Technical & Airworthiness Director of Express Air Cargo said: "Being a start-up airline, we had been looking for a trusted EASA-certified maintenance partner with European standards and modern technological background to start our operations, which led us to choose FL Technics."

AAR Lands Deal

Wood Dale, Illinois-based AAR has signed a five-year landing gear maintenance contract with South Korean carrier Asiana Airlines. The US MRO will provide landing gear overhaul and exchange services for the carrier's fleet of Boeing 767-300s and 777-200ERs. AAR will perform the overhauls at its dedicated facility in Miami. Peter Loeb, Vice President, Global Sales and Marketing commented: "AAR's strong reputation, competitive shop turnaround times and proven quality have allowed us to forge relationships with new customers in the Asia Pacific region, one of the fastest-growing aviation markets in the world."

Ethiopian Component Support

Lufthansa Technik has won a ten-year Total Component Support (TCS) contract from Ethiopian Airlines for its fleet of 14 Airbus A350 XWBs. Under the terms of the agreement, the German MRO will provide component maintenance, repair and overhaul as well as access to a large pool of spare parts. The two companies have been working together since the 1990s, with the German firm also looking after the African carrier's Boeing 787 and Bombardier Q400 turboprop fleets. Mesfin Tasew, COO Ethiopian Airlines said: "We are delighted that we are able to extend our long-term Boeing 787 component support with Lufthansa Technik to our new A350 fleet."

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Thursday, October 20, 2016
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Fokker Services Schiphol Facility Tour

Thursday, October 20: Transportation to and from the facility will be provided. Participants will also be entered into a prize draw with the chance to win an Apple Watch!



The latest training aids available for the aviation professional

Successful graduates from MAEL's apprenticeship scheme.
MAEL

MAEL Apprentices Graduate

Eleven students have graduated from Monarch Aircraft Engineering Limited's (MAEL's) engineering apprenticeship scheme, having completed a City and Guilds Level 3 Advanced Apprenticeship in Aeronautical Engineering.

At their graduation ceremony at the company's Training Academy in Luton on August 26, MAEL Managing Director

Chris Dare said the apprentices should be very proud of their achievements. He added: "We're delighted that they will continue to make a significant contribution to the business, with all offered positions within the company." MAEL has now welcomed the next batch of apprentices for its four-year scheme.



Nine students from Belgrade, Serbia, have completed the first phase of their engineering training in the United Arab Emirates and are now beginning the next stage of their practical learning with Etihad Airways Engineering. Etihad Airways has an equity partnership with Air Serbia, while its engineering arm provides airframe and component maintenance services – as well as supply chain management and design engineering – to its parent airline, equity partner airlines and third-party carriers.

ETIHAD AIRWAYS



Serbian Students Progress

Gama Aviation and CATS Aviation Training Team Up

Aviation services provider Gama Aviation and CATS Aviation Training are to jointly promote each other's services for new and recurrent training requirements.

Graeme Pollard, Head of Training for Gama Aviation's EASA Ground School, commented: "This is a natural fit to add another partner to our training capability. "CATS customers who attend and pass their ATPL may well become future business aviation pilots and they will rely on courses such as our Part-FCL, CRM and Command training courses

to reach their career aspirations."

Matt Harvey, CATS Aviation's General Manager, added: "This agreement makes sense for us and our customer base of existing commercial pilots and those aspiring to move into commercial roles.

"We have previously looked into extending our services into the ground school areas that Gama Aviation occupies, but when you consider their expertise and track record in this area, it made much more sense for both sides to co-promote their offers rather

than compete."

Gama Aviation is also moving all course bookings for its ground training department online. Pollard explained: "Feedback from our clients suggested this was a neater, hassle-free way of booking courses.

"We have responded by providing added functionality to the training section of the website. Calls for booking will also be taken but all the transactions moving forward will be via credit card payments, with the exception of group bookings."

Embraer and AIAC Collaborate

Brazilian manufacturer Embraer has signed a memorandum of understanding (MOU) with the Mohammed VI International Aviation Academy (AIAC) in Morocco for engineering development in the North African nation.

As part of the agreement, Embraer will work with AIAC on initiatives to develop training programmes for engineers in aviation-related fields.

Humberto Pereira, Embraer Vice President for Engineering and Technology, commented: "We're pleased with the opportunity to share with AIAC our expertise in the preparation of highly skilled engineers to address the challenges of such a demanding industry like aerospace.

"As a leader in commercial aviation, and with 46 years of experience in designing and manufacturing aircraft that operate in more than 60 countries, we're always honoured to share our knowledge with organisations that aim to play an important role in such a competitive industry."

The AIAC – a higher education institution founded in 2000 to train pilots, air traffic controllers, safety personnel and engineers – is located close to Casablanca Airport, its six-hectare campus neighbouring a number of high-tech industrial facilities.

At the signing ceremony, AIAC Managing Director Abdellah Menou said: "This MOU with Embraer represents an important step in our strategy of working with globally renowned organisations, such as Embraer, willing to collaborate and to support us in our goal of preparing aeronautical engineers in Morocco with world-class standards."

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High-Flying Porsche

International freight forwarder a.hartrodt (Belgium) was set the challenge of how to transport a one-of-a-kind classic 1965-era Porsche 356C from Brussels to Montreal in August. The car had been restored to its original showroom condition by the renowned Porsche Center Brussel Classic for a private owner in Canada. The 1,997lb (906kg) vehicle was carefully strapped to a specially made low pallet so that it would fit through the aircraft's cargo door. It was then loaded aboard an Air Canada jet and flown across the Atlantic to its owner.

"We handled the car's departure from the moment it left the Porsche Center until the key was turned by the owner to hear the engine roar for the first time," explained Philippe Fierens, Director a.hartrodt (Belgium). He added: "The company has accumulated a wealth of experience during 129 years in the business and we have professionally trained staff that know how to deal with such beautiful and valuable cargo. We meticulously plan and carry out assignments with the utmost care." (Photo a.hartrodt [Belgium])



Events

Enthusiast shows and events worldwide may be listed here – FREE of charge. Organisers are invited to send correspondence to the editorial department (email: airlinerworld@keypublishing.com). Alternatively, visit our website at www.airlinerworld.com

Sept 18

Bristol Aviation Fair 2016, Old Airport Terminal, Bristol Airport www.bristolairportspotting.co.uk
info@bristolairportspotting.co.uk

Oct 9

Birmingham Aircraft Enthusiasts Fair, Solihull Moors Football Club, B92 9EJ, UK
Carl McQuaide (0)7903 848256; speedbird707@aol.com
<http://speedbird707.wix.com/bhamaviationfair>

Nov 5-6

Aviation Weekend Frankfurt, Gym Schwanheim, Saarbrücker Straße 4, 60529 Frankfurt, Germany
www.aviation-weekend.com/

Nov 27

Heathrow Aircraft Enthusiasts' Fair, Kempton Park Racecourse, Sunbury-on-Thames, TW16 5AQ
Keith Manning, (0)1423 862256; email: keith768@btinternet.com www.aircraftenthusiastfair.co.uk

Jan 8, 2017

Croydon Airport Aviation, Military & Airline Collectors Fair, Hallmark Hotel, Purley Way, Croydon, CR9 4LT
Aviation Antiques (0)7973 885754,
email: davidsutton16@aol.com

Shows/Displays

Sep 25-27

World Routes, Chengdu, China
www.routesonline.com

Oct 11-13

ERA General Assembly, Madrid, Spain
www.eraa.org

Oct 12-15

Japan International Aerospace Exhibition, Tokyo Big Sight, Japan www.japanaerospace.jp

Oct 18-20

MRO Europe, Amsterdam, Netherlands
www.mroeurope.aviationweek.com

Nov 1-3

NBAA, Orlando, Florida, USA www.nbaa.org

Events are subject to change without Airliner World's knowledge. Please check details prior to travel.

BA is Victorious

British Airways (BA) embraced the Olympic spirit by applying special markings to a Boeing 747-400. The jet, G-CIVA (c/n 27092), bearing the new name *VictoRIOus*, was used to fly the successful Team GB home from the Rio 2016 Olympic Games. Featuring '#greattobeBAck' titles and a gold nose cone, it will also carry ParalympicsGB back from the Paralympic Games in Rio de Janeiro. BA Chairman and CEO Alex Cruz said: "We're excited to be bringing the

athletes home, 'happy and glorious', following the Games! VictoRIOus is a very fitting name, reflecting the great pride we have for our sporting heroes, and is a great play on words too." British Olympic Association CEO Bill Sweeney added: "One thing we've had from start to finish and beyond is the incredible support from fans for Team GB and ParalympicsGB, both in Rio and Great Britain and Northern Ireland. "That support means everything to the athletes, and for them to arrive home

on board VictoRIOus and share their experiences with their family, friends and fans is very special, and we thank British Airways for arranging this special flight home." The aircraft operated a special charter, flight number BA2016, from Rio back to London/Heathrow on August 22/23 carrying Team GB, followed by a second service on September 20 with ParalympicsGB. The name VictoRIOus was chosen by hundreds of Twitter users in a poll and was one of four shortlisted entries selected by athletes and BA staff. (Photo BA/Stuart Bailey)



Puck Competition Winner

The winner of the Kinetic Avionics 1090-Puck competition in our April 2016 issue was **Mr Alan Williams of Cheshire**. We hope he has hours of enjoyment with his new Puck.



Information
for the
traveller.

Aerospace Bristol

HRH The Princess Royal has accepted the patronage of the *Aerospace Bristol* museum at Filton, which will honour the century of achievements of the Bristol Aeroplane Company, its famous designs and the organisation's employees. The museum, formerly the Bristol Aerospace Centre, and run by the Bristol Aero Collection Trust, has already raised much of the £18.4m required to restore the World War Two-era Grade II-listed Hangar 16, refurbishment of which is nearly complete, which will house most of its collection. Exhibits will be displayed chronologically, starting with the 1910 Bristol Boxkite, through the two world wars to the post-war development of passenger airliners such as the Britannia. It will also include the development of helicopters such as the Bristol Sycamore and twin-rotor Bristol 172, guided missiles, cars, buses and Bristol engines. A new building is being constructed to house the last aircraft to be built at Filton – Aerospatiale/BAC Concorde G-BOAF (c/n 216), the last of the type

to fly when it returned home to Filton on November 26, 2003. Meanwhile another World War One-era building will be refurbished to house the

restoration workshops. The museum is due to be opened by The Princess Royal next June. (Photo Aerospace Bristol)



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Closing date for entries is 15:00 GMT on December 16, 2016. The winner will be notified no later than December 23, 2016.



GLASGOW AIRPORT

Caption
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This month's
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competition.



Thanks to everyone who entered the May 2016 competition. Congratulations go to Peter Clegg who was selected as the winner.

"Ministers applying new EU directive that requires London's new runway to be built in Hamburg, on competition grounds."

Other notable entries:

"The Boss said the airport development plans were now set in concrete and we've got to find them."

IAN BUCHAN

Reports and details of recent incidents.

EMERCOM Ilyushin Il-76 RA-76840 was involved in a fatal accident on July 1.
AIRTEAMIMAGES.COM/
ALEX SNOW

Fatal Il-76 Crash

The crew of a Russian Ministry of Emergency Situations (EMERCOM) Ilyushin Il-76 that crashed while fighting wildfires in the Irkutsk region have been posthumously awarded the Order of Courage.

The aircraft, RA-76840 (c/n 1033417553) crashed on July 1, while it was battling fires in the Kachug district that were threatening the settlement of Karam as well as important energy and transport infrastructure. The crew of ten was carrying out its second mission of the day. Rescuers took two days to find the wreckage because of the complex terrain and thick smoke from the wildfires. It was located 5.6 miles (9km) to the southeast of Rybny Uyan on the

slope of a volcano and was almost completely destroyed.

The Orders of Courage were awarded to captain Leonid Filin, second pilot Aleksei Lebedev, navigator Georgy Petrov, engineer Viktor Kuznetsov, radio operator Igor Murakhin, controllers Sergei Susov, Sergei Makarov and Marat Khadayev, and aircraft technicians Vadim Zhdanov and Andrei Mashninov.

Speaking at the crew's funerals, Minister of Emergency Situations Vladimir Puchkov said "they fought to protect people and their homes against a wall of fire and did their duty till the end."

The minister also pledged to help support the families of the crew.



NTSB Investigating Southwest Engine Incident

A Southwest Airlines Boeing 737-7H4 was forced to divert to Pensacola after what the National Transportation Safety Board (NTSB) has described as an "uncontained engine failure".

The aircraft, N766SW (c/n 29806), was operating flight WN3472 from New Orleans, Louisiana, to Orlando, Florida when the incident occurred. The jet was climbing through FL310 when the front section of the left-hand CFM56 engine detached and debris punched a hole in the side of the fuselage, causing a loss of cabin pressure.

"The flight landed safely without incident at Pensacola International Airport at 9:40am central time. Initial reports indicate there were no injuries among the 99 passengers and five crew members on board," the airline said in a statement.

A replacement aircraft was sent to Pensacola and the passengers reached Orlando around five hours after they were scheduled to. The NTSB investigation is ongoing.

Everybody Escapes Emirates Accident

Emirates 777-31H A6-EMW was involved in a landing incident at Dubai.
GRAHAM WEATHERBY

All 282 passengers and 18 crew members survived a landing incident involving Emirates Boeing 777-31H, A6-EMW (c/n 32700) at Dubai International Airport on August 3, that saw the jet engulfed in flames.

A video posted online showed the jet

skidding down the runway on its belly and the right engine detaching from the wing. In other photos, black smoke was seen billowing from the jet as firefighters tackled the blaze. A firefighter was killed whilst dealing with the incident.

The aircraft was operating flight EK521

from Thiruvananthapuram in India to Dubai.

"The Boeing 777 aircraft, departed at 10.19am from Trivandrum International Airport and was scheduled to land at 12.50pm at Dubai International Airport. We can confirm that there are no fatalities among our passengers and crew," the airline said in a statement.

Manufacturer Boeing dispatched a technical team to Dubai to assist the investigation. The majority of the passengers on board were from India, with 11 from the UK.

As a result of the incident, Dubai International Airport experienced severe delays and Emirates cancelled a number of flights.



DATE	REG'N	C/N	TYPE	OWNER	FATALITIES	LOCATION	NOTES
July 20	N46CE	BB-1492	B200 Super King	Century Equipment Company	0	US	Aircraft struck a tree on landing at Burnsville-Mountain Air Airport, North Carolina
July 21	N7581F	208B-0389	Cessna 208B	Skydive Twin Cities	0	US	Runway excursion at Baldwin Airport, Wisconsin
July 26	N362FX	50500239	Embraer Phenom 300	Flexjet	0	US	Runway excursion at Sugar Land Regional Airport, Texas
July 31	RA-54790	1G183-54	Antonov An-2R	Lemaks	3	Russia	Destroyed when it impacted Abatova Mountain.
August 1	N234AV	U-234	Beechcraft C99	Ameriflight	0	US	Sustained substantial damage following a collision with an unidentified object near Spanish Fork, Utah
August 3	A6-EMW	32700	Boeing 777-31H	Emirates	0	UAE	Destroyed in a 'landing incident' at Dubai.
August 4	9N-AKC	208B-0554	Cessna 20B	Makalu Air	0	Nepal	Ditched in the Kamali River following a loss of engine power
August 5	HA-FAX	24437	Boeing 737-476SF	ASL Airlines Hungary	0	Italy	Overran the runway at Bergamo
August 11	RA-17812	1G204-13	Antonov An-2R	ALROSA	0	Russia	Left-hand gear collapsed on landing
August 14	RF-31121	76820003001	Beriev Be-200ES	EMERCOM	0	Portugal	Hit trees while fighting a forest fire near São Pedro do Sul
August 16	YV3051	550-0070	Cessna 550 Citation II	Private	2	Venezuela	Written off near Oscar Machado Zuloaga Airport
August 27	N766SW	29806	Boeing 737-7H4	Southwest Airlines	0	US	"Uncontained engine failure" during flight from New Orleans to Orlando.

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Air India

A Tale of Two Airlines

To understand the Air India story, you have to look at the nation of India. The airline is a microcosm of the history of the country, its successes and failings can be tracked side by side. The story is often complicated and not always pretty. Safety issues, industrial disputes and a lack of funds sit alongside achievements unrivalled in the global aviation industry.

Air India flies into some of the roughest airfields in current civil aviation; it moves 18 million people a year over a network encompassing cities such as Sydney, New York, Tokyo and London as well as a plethora of airports in South Asia.

Domestically, the geography of India provides the carrier with challenges;

from the tropical climate of the south to temperate and alpine weather in the Himalayan north where elevated regions receive sustained winter snowfall.

Early Days

Today's carrier is the result of a merger between Air India and Indian Airlines.

The original Air India was started when the Tata family won a contract to carry mail for Imperial Airways in April 1932. The aviation department of Tata Sons was formed with two de Havilland DH.80A Puss Moths and it operated its first services to Karachi, in what is now Pakistan.

Tata Airlines became a public limited company on July 29, 1946 and chose the name Air India. When India

Air India has a long and rich history. The current carrier, the result of a merger between Air India and Indian Airlines in 2007, operates a large domestic and international network.

AIRTEAMIMAGES.COM/
STEVE FLINT



Raf Jah has gained first-hand experience of the Indian aviation scene over the past 30 years. He charts the history and development of the country's national carrier, Air India.

achieved independence in 1947 it was given a working infrastructure and a budget surplus largely based upon agriculture. India's first prime minister, Jawaharlal Nehru had other ideas. Educated at Harrow and Cambridge in England, Nehru was an idealist and he chose the path of a command economy and socialism for India. As part of his plans major industries were nationalised. Tariffs were imposed upon all imports, even from India's former colonial power, Great Britain.

In 1948, the new independent government of India acquired a 49% stake in the airline. The management at this time was extremely forward-thinking and on June 8, 1948, Lockheed Constellation L-749A VT-CQP (c/n 2506), *Malabar Princess*, took off

from Bombay (now Mumbai) bound for London/Heathrow. From 1948 to 1950, the airline started operations to Nairobi, Rome, Paris and Düsseldorf.

The Air Corporations Act of 1953 forced the nationalisation of all civil aviation, with all private carriers sub-

sumed into two state-owned entities: Air India International for overseas routes and Indian Airlines for domestic services. However, the former kept hold of certain key trunk routes that were extensions to services into Europe, such as Bombay to Calcutta >>



Staff service
Lockheed L-1049G
Super Constellation
VT-DHL at
Heathrow in 1956.
AIRTEAMIMAGES.COM/
ATI COLLECTION



"The Super Constellation was a fantastic aircraft. We would leave Bombay and fly ten hours to Cairo to refuel. Then we would fly another ten to London. It really cut the journey time down."





The Lockheed Super Constellation reduced the total time it took to fly from Bombay to London to 20 hours.

AIRTEAMIMAGES.COM/
ATI COLLECTION

(now Kolkata).

The airline took delivery of its first Super Constellation, VT-DGL (c/n 4547), in June 1954. The then cutting edge aircraft reduced the flight time to London to just 20 hours. An early customer of Air India said: "[It] was a fantastic aircraft. We would leave Bombay and fly ten hours to Cairo to refuel. Then we would fly another ten to London. It really cut the journey time down.

"First Class was always at the rear, away from the engines, but the aircraft used to vibrate. I always carried a small screwdriver with me, as the vibrations would undo the screws in my cameras, and I would have to tighten them all on landing."

As more examples joined the fleet, services to Bangkok, Hong Kong, Tokyo and Singapore were added.

Rajasthani arches were painted around the aircraft's windows as part of Air India's 'Palace in the Sky' livery.

AIRTEAMIMAGES.COM/
ANTHONY GUERRA

Joining the Jet Age

In 1960, Air India International received its first Boeing 707-420, VT-DJJ (c/n 1723), becoming the first Asian airline to acquire a jet aircraft and instantly halving flight times to London in the process. At the same time Air India International launched services to New York, a route that continues to this day. On June 8, 1962 the airline's name was officially shortened to Air India and three days later the carrier phased out its last prop aircraft making it the world's first all-jet airline.

The next major addition to the Air India fleet came in 1971 with the arrival of the carrier's first Boeing 747-200, VT-EBD (c/n 19959). To celebrate the induction of the jumbo, Air India introduced its 'Palace in the Sky' livery featuring Rajasthani arches painted around every window on the main deck

to give the impression of a palace.

While India was cutting the ties and trappings of the former maharajas, it was happy to celebrate them via its airline; Air India's mascot is 'the maharajah'. The celebration of emperors and princesses did not last long. In August 1979, the ruling Janata Party ordered the word 'Emperor' to be struck from the airline's aircraft while English would

To celebrate the induction of the jumbo, Air India introduced its 'Palace in the Sky' livery featuring Rajasthani arches painted around every window on the main deck...





This livery was unpopular with staff and was axed in favour of the old 'Palace in the Sky' scheme after just two years.

AIRTEAMIMAGES.COM/KEITH BLINCOW (ATI)



Air India joined the jet age when it took delivery of its first Boeing 707 in 1960. The airline became the world's first all-jet carrier when it phased out the last of its prop aircraft on June 8, 1962.

AIRTEAMIMAGES.COM/CARL FORD

be replaced with Hindi on the port side of the rudder. Prior to this, both surfaces of the vertical fin had English titles while the fuselage had Hindi titles on the starboard side and English on the port. In a nation of 144 different official languages of which Hindi is just one, this was a stunning piece of arrogance. For the Tamils and Bengalis, English was seen as a unifying national

Gulf War Airlift

Indian Airlines came to the rescue of stranded Indian workers during the first Gulf War in 1990. Most were poor labourers or junior staff in companies who had fled to Dubai as the Iraqi Army advanced into Kuwait. With the co-operation of the UAE Government, Indian Airlines airlifted all 1.1 million Indian citizens home free of charge. Even operating around the clock, the evacuation took 30 days. This is still the largest single civilian evacuation conducted by any nation, let alone any carrier. Until Indian Airlines' merger with Air India every ticket had a small 'Gulf War surcharge' to pay for the cost of the evacuation.

Airbus A310s joined the fleet to operate services to East Africa, the Far East and on routes where demand didn't justify the use of a Boeing 747.

AIRTEAMIMAGES.COM/EUROPIX

language. India has long been plagued by communalism, and the imposition of a north Indian language over the entire nation was not surprising. The Janata Party government did not last long, being ousted in 1980 – but the Hindi remained.

Fleet Renewal

Air India was now an impressive international airline, operating 707 and 747-200s. By the mid-1980s the 707s were phased out. In August 1982 a single Airbus A300-B4, VT-EHN (c/n 177) was delivered and this was quickly followed by VT-EHO (c/n 180) and VT-EHQ (c/n 190), to give Air India a desperately needed short-haul widebody capability serving the Gulf and surrounding countries.

The A300s were followed in April 1986 by the first of eight Airbus A310-304s. The maiden aircraft was registered VT-EJG (c/n 406) and named *Jamuna*; all the A310s were named after rivers in India. The new aircraft operated to East Africa, the Far East and destinations where demand didn't justify the use of a 747.

During India's socialist era, the airline became a major foreign exchange earner for the nation and an ambassador to the world. Since its inception Air India has been a full-service airline with an extremely highly educated and hardworking cabin crew working to high standards. >>





Indian Airlines Viscount VT-DIZ outside the hangars at Cambridge.
AIRTEAMIMAGES.COM/
BOB O'BRIEN COLLECTION



The Boeing 737 "revolutionised" the Indian domestic market, regularly flying the length and breadth of the country.
AIRTEAMIMAGES.COM/
BOB O'BRIEN COLLECTION



In later years, Indian Airlines transitioned to the Airbus A320.
AIRTEAMIMAGES.COM/TT

On October 15, 1989 Air India unveiled its new corporate identity featuring a gold sun on a deep red background. This proved extremely unpopular with staff and, amid worsening morale, it was axed two years later with the 'Palace in the Sky' scheme reinstated.

New Challenges

It was only when P V Narasimha Rao became Prime Minister that India embarked on a wave of economic liberalisation that continues today. Narasimha Rao steered the nation towards repealing the Air Corporations Act, allowing the formation of private airlines. At first, this did not affect Air India as all carriers had to be in operation for five years and have 20 aircraft to fly internationally.

Air India's acquisition of its first Boeing 747-400, VT-ESM (c/n 27078), in 1993 enabled the carrier to operate its first non-stop flight between New York and Delhi.

The -400s plied routes to London, Tokyo and Durban via Dubai, Dar es Salaam and Johannesburg. The latter route was eventually served by an Airbus A310-300 before Air India axed its East African network in 2010 in the face of stiff competition from Gulf and African rivals.

The airline's fleet continued to evolve with its original Airbus A300s donated to Afghanistan in 2002 to enable the rebirth of Ariana Afghan Airlines. Four former United Airlines 777-200s

were added, with the first arriving on December 25, 2004. The type entered revenue service the following month.

On the short-haul front, Air India Express was launched in May 2004 as a wholly owned low-cost subsidiary serving the Middle East and Southeast Asia with a fleet of Boeing 737-800s. This put it in direct competition with Indian Airlines and just three years later the decision was taken to merge the domestic carrier with Air India.

Indian Airlines

At the time of the merger, Indian Airlines was operating in an increasingly competitive domestic sector.

When the Indian aviation scene was nationalised in the 1950s, eight private airlines were pulled together to form Indian Airlines; Deccan Airways, Airways India, Bharat Airways, Himalayan Aviation, Kalinga Airlines, Indian National Airways, Air Services of India and the domestic arm of Air India.

Deccan Airways stood out as a leader in the industry with a number of Douglas DC-3 Dakotas based at Hyderabad/Begumpet Airport. It was also the first airline in India to employ female stewardesses. As part of the nationalisation, all the carriers' aircraft – mainly Dakotas – were seized for Indian Airlines use.

Under Nehru, India was taking an economic nose dive, and politically it was much more in synch with the Soviet Union than Europe. As

the bureaucracy increased, efficiency decreased. As a post-independence domestic corporation, Indian Airlines was affected by this malaise far more than Air India. In many ways it was no different to any other part of the government and unlike Air India, it had no competition. There was no food service to speak of, no premium cabins and not enough aircraft to satisfy demand. The population of India was growing and – with its roads in a terrible state – looking for alternative transport methods.

On the mainland, people had a choice between air or rail travel – to visit India's numerous islands it was either a day's travel by air or three days at sea on a government steamer.

In 1957, Indian Airlines ordered Vickers Viscounts, which dramatically improved prospects for the airline. Despite this, a domestic flight from Bombay to Calcutta (now Kolkata) would take six hours in a Viscount; only four hours shorter than the flight to Cairo. To further illustrate the size of India, the Andaman and Nicobar Islands stood 712 miles (1,146km) off the

Safety

Air India suffered some major crashes during its history. All 11 crew and 106 passengers were killed when Boeing 707-437 VT-DMN (c/n 18055) crashed into the side of Mont Blanc – just 200m from where L-749 Constellation VT-CQP had crashed in 1950. The accident was attributed to a miscommunication between the crew and Geneva Air Traffic Control. Boeing 707-437 VT-DJI (c/n 17722) was written off when it crashed at Bombay during a training flight in 1971, thankfully all on board escaped unharmed.

The airline's maiden 747-200 VT-EBD (c/n 19959) was lost on take-off from Bombay on New Year's Day 1978, killing all 213 on board. The crash was attributed to a failure of the attitude director indicator and a lack of response by the crew. Two crew and 15 passengers were killed on June 22, 1982 when 707-437 VT-DJJ overran the runway in bad weather at Bombay and the fuselage broke in two.

On June 24, 1985 747-200 VT-EFO (c/n 21473) blew up in mid-air off the coast of Ireland while flying from Canada to London, killing all 349

people on board. Sikh extremists were blamed for the attack.

Safety was also a serious issue for Indian Airlines – it was involved in 28 incidents between 1970 and 1979, with the loss of 278 passengers and personnel. Although it reduced the number of accidents in the 1980s, it still suffered 23 incidents resulting in 134 deaths while 217 people were killed across 14 incidents in the 1990s. From the turn of the millennium until the merger, the airline enjoyed a much better record with just two incidents and no fatalities.

Although Air India's recent safety record has been much improved, its subsidiary Air India Express suffered a fatal accident on May 22, 2010 involving Boeing 737-8HG VT-AXU (c/n 36332). Flight 812 from Dubai, overran the runway on landing at Mangalore, fell off a cliff and burst into flames. Only eight of the 166 people on board survived the accident. Investigators found that the aircraft had touched down much further along the runway than it should have and attributed the crash to crew error.



Boeing 747-200 VT-EFO on approach to Heathrow on June 10, 1985. Just 14 days later this aircraft was blown up in mid-air. WIKIMEDIA COMMONS/IAN KIRBY



A map showing Air India's domestic network. AIR INDIA

coast of India and 300 miles (483km) from the Burmese coast. The Islands were served by Viscounts from Calcutta which flew via Rangoon. This posed its own difficulties. Passengers on domestic flights to the islands were now forced to carry passports to travel within their own country.

Indian Airlines agreed to acquire the

Hawker Siddeley HS 748, but part of the deal was that the aircraft were to be built in India. The set-up of a production line in-country took a great deal of time and the carrier added a fleet of Fokker F27s to plug the gap, the first of which entered service in May 1961. It took six years before the first HS 748s came online, but the new turboprops

Air India's current livery is an updated version of its popular 'Palace in the Sky' scheme. AIRTEAMIMAGES.COM/ALEKSI HAMALAINEN

helped open up the airfields of the Himalayan foothills to the middle class of New Delhi.

Jet services were introduced to the domestic scene in 1964 with the Sud Aviation Caravelle. While the French airliner served the airline well it was the arrival of the Boeing 737-200 in the early 1970s that revolutionised the Indian domestic market.

The aircraft were regularly routed throughout the nation on trunk and public service routes, flying from one end of the country to the other, crossing three climatic zones, from the tropics of the Andaman's to the sub-zero temperatures of Leh.

Boeing wanted Indian Airlines to buy more 737s until the 767 was ready but

The population of India was growing and – with India's roads in a terrible state – looking for alternative transport methods.

Airbus stepped in and offered its A300, which was ready to enter service. The first of three A300s joined the carrier in April 1976 and were ideal for passenger and freight operations throughout the country.

Because the airline still didn't have the capacity to match demand, it needed to turn around its aircraft quickly, boasting a 45-minute turn time. With four air stairs to every A300 and multiple pallet loaders, they regularly turned around 262-seat aircraft quicker than most low-cost carriers do today.

Indian Airlines eventually

>>



**Airbus A321-211
VT-PPA taxis out for
departure at Mumbai.**
AIRTEAMIMAGES.COM/
NITIN SARIN



**One of the airline's
Airbus A319s, VT-SCM
rests on the ramp
between flights at
Hyderabad.** RAF JAH

introduced a premium 'Executive Class' cabin, and full catering in Economy Class.

While the carrier was introducing new Airbus A320s in the 1990s, the economic liberalisation process was ending Indian Airlines' domestic dominance. New carriers such as Jet Airways, Kingfisher Airlines and SpiceJet were providing serious competition to the state carrier.

To fight this Alliance Air was formed in April 1996 as a low-cost operation; following the Air India/Indian Airlines merger the carrier was renamed Air India Regional.

When the two carriers joined forces in 2007, Indian Airlines was carrying 7.5 million passengers across its domestic and regional network.



Growing Pains

The dominant partner and brand name in the merger was Air India and so both airlines were amalgamated into that brand. Some were opposed to the merger and the move remains controversial to this day. Most notably, the current Chairman and Managing

Director of Air India, Ashwani Lohani, is very vocal in his criticism.

"We merged Air India with Indian Airlines – two separate companies with two separate cultures. One was a videshi [international] culture, second was a desi [domestic] culture. You tried to merge these two organisations with-



**Crisp blue skies greet
Air India Express
737-86N VT-GHA at
Birmingham on its deliv-
ery flight in March this
year.** AIRTEAMIMAGES.COM/
DAVE STURGES



Air India Express operates a fleet of 19 Boeing 737-800s on domestic and regional services.

AIRTEAMIMAGES.COM/
DAVE STURGES

out any objective in mind. Merger for mergers' sake is not on," he told Indian state TV channel Doordarshan.

Prior to the merger both companies were in the black but afterwards Air India recorded a \$90m loss – working capital loans have seen this spiral to \$3bn.

Despite this the government decided to instigate a renewal of Air India's fleet, taking out a \$4bn loan to fund it, much to the annoyance of Lohani.

"Buying planes is a capital investment, which in any company the owner has to do. This was for the government to provide the money for buying the planes.

But the government decided a company will take a loan and then buy planes."

The current Air India boss said the company's debts are "not

(something) for which the company or its employees are responsible". "It will take decades to wipe that off."

While Lohani complains about the acquisition of new aircraft, they were desperately needed. As other carriers inducted newer Airbus A330s and Boeing 777s, Air India was relying on A310s and 747s.

For the merger to be successful certain issues had to be ironed out. There had always been an alliance of sorts between the two airlines, however they did not like to co-operate with each other. While airlines such as Jet Airways were able to fly seamlessly from Europe or Asia to secondary cities via

India's larger conurbations, Air India and Indian Airlines were still fighting over who transferred the bags.

Post-Merger

In 2007 Air India took delivery of its first new-generation Boeing 777s. The mixture of -300ER and -200LR aircraft replaced leased 747-400s and were used to open new non-stop services to the US. The airline was also invited to be a part of the Star Alliance in 2007 and, although that invitation was withdrawn for technical reasons, full membership was achieved in 2014.

In September 2012, Air India's first Boeing 787-8 was delivered to Delhi. The carrier has received 21 of its 27 Dreamliners on order and the type has enabled the airline to launch non-stop flights to Sydney and Melbourne in >>

Air India Fleet	
Type	Total
Airbus A319	21
Airbus A320	24
Airbus A321	20
ATR 42-320	3
ATR 72-600	5
Boeing 747-400	5
Boeing 777-200LR	3
Boeing 777-300ER	12
Boeing 787-8 Dreamliner	21
Bombardier CRJ700	3

"We merged Air India with Indian Airlines – two separate companies with two separate cultures."

Chairman and Managing Director of Air India, **Ashwani Lohani**





Australia, as well as Moscow. It has also taken over from the 777s on flights to the UK.

Traffic is fed into Air India's hubs at Delhi, Bengaluru, Kolkata, Hyderabad and Mumbai from secondary cities by Air India Regional, which operates a small fleet of ATR 42, ATR 72 and Bombardier CRJ700s. Kochi-based Air India Express flies its 737-800s to 13 international destinations from 13 Indian cities as well as offering four domestic routes, providing competition for low-cost carriers such as IndiGo and Go Air.

Air India has had its fair share of industrial disputes since the merger. Most are based around money and the loss of certain perks as part of the restructuring of the company.

The combined losses for Air India and Indian Airlines in 2006-07 were \$110m. By March 2011, Air India had accumulated a debt of \$6.3bn with an operating loss of \$3.3bn.

In 2012, a study commissioned by the Corporate Affairs Ministry recommended that Air India should be partly privatised and in May of that year the carrier invited offers from banks to raise \$800m via external commercial borrowing and bridge financing. The following year, the then Civil Aviation

Minister Ajit Singh stated privatisation was key to the airline's survival. However, politics came into the equation and the Bharatiya Janata Party opposed the government plans.

In August 2015, Air India signed an agreement with Citibank and State Bank of India to raise \$300m in external commercial borrowing to meet its working capital needs.

For financial year (FY) 2014-15, Air India's revenue, operating loss and net loss were \$2.9bn, \$32m and \$80m respectively. This was an improvement on recent years – in FY 2011-12, when they were \$2.2bn, \$76m and \$110m – helped by the low price of jet fuel and a series of austerity measures.

As of February this year, Air India was the third largest airline in India, after low-cost carrier IndiGo and Jet Airways with a market share of 15.4%.

In August 2015, Air India signed an agreement with Citibank and State Bank of India to raise \$300m in external commercial borrowing to meet its working capital needs.

Air India Regional feeds traffic into the main network from secondary cities using ATR 72s and Bombardier CRJ700s.

AIRTEAMIMAGES.COM/
JONATHAN ZANINGER

Opportunities

There is a strong focus on making Air India profitable once more. Lohani is confident that this can be achieved by 2020 and could lead to the possibility of privatisation. There are some signs of dynamism within the company - Air India now operates a daily 747-400 from Jeddah to Hyderabad, to meet demand. But while it is not unusual for a 777 to operate the last flight from Hyderabad to New Delhi, more capacity is needed domestically. Certain intra-India trunk routes - flown by A321s for example - are crying out for widebody operations.

Flights to East Africa are set to resume using the 787, with Air India seeing potential to challenge the Gulf carriers on those routes. Air India already flies to an extensive network in the Far East and Australia, and the opportunity to serve the burgeoning mining sector with a non-stop flight from Tanzania to Delhi with onward connections to Australia could be exploited.

With a relatively modern fleet and vast network, Air India has all the tools to

succeed. However, it will need to free itself from the shackles of politics and debt if it wants to be a truly competitive player on the world stage. **AWA**

Air India's current narrowbody fleet consists of Airbus A320 Family jets.

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Acronyms and abbreviations have become an intrinsic part of business speak. In the commercial aviation business their usage has become unavoidable and in the following table we try to guide you through some of those most commonly-used examples in the pages of Airliner World. This list will be regularly updated.

AAIB	Air Accidents Investigation Branch (UK)
ACAS	Airborne Collision-Avoidance System
ADR	Accident Data Recorder
ALPA	Air Line Pilots Association (US)
ANS	Airborne Navigation System
APU	Auxiliary Power Unit
ATC	Air Traffic Control
ATP	Advanced Turbo-Prop (BAe)
ATS	Air Traffic Service
BAe	British Aerospace (now renamed BAE Systems)
CAA	Civil Aviation Authority (UK)
CDA	Continuous Descent Approach
CEO	Chief Executive Officer
CIS	Commonwealth of Independent States (formerly Soviet Union)
c/n	Construction number
combi	Aircraft that routinely carry passengers and cargo on the main deck at the same time
CVR	Cockpit Voice Recorder
dB	Decibel
DfT	Department for Transport (UK)
DME	Distance-Measuring Equipment
EADS	European Aeronautic Defence and Space Company

EASA	European Aviation Safety Agency
ERAA	European Regions Airline Association
EROPS	Extended-Range OPerationS
ETOPS	Extended-range Twin-engine OPerationS
FAA	Federal Aviation Administration (US)
FAI	Fédération Aéronautique Internationale (France)
FAR	Federal Aviation Regulations (US)
FBO	Fixed Base Operator
FDR	Flight Data Recorder
FL	Flight Level (usually expressed in hundreds of feet)
FOD	Foreign Object Damage
GA	General Aviation
GAPAN	Guild of Air Pilots And Navigators (UK)
GDP	Gross Domestic Product
GE	General Electric
GECAAS	GE Capital Aviation Services
GMT	Greenwich Mean Time
GNS	Global Navigation System
GPS	Global Positioning System
GPU	Ground Power Unit
IACA	International Air Carrier Association
IAP	International Airport
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IFALPA	International Federation of Air Line Pilots Associations
IFR	Instrument Flight Rules
ILFC	International Lease Finance Corporation
ILS	Instrument Landing System
IMC	Instrument Meteorological Conditions
INS	Inertial Navigation System
JAA	Joint Aviation Authorities (European)
LCC	Low-Cost Carrier
LCD	Liquid Crystal Display

LED	Light-Emitting Diode
localiser	Steering guidance element of an ILS system
LORAN	Long Range Aid to Navigation
MD	Managing Director
MLS	Microwave Landing System
MLW	Maximum Landing Weight
MoD	Ministry of Defence (UK)
MoU	Memorandum of Understanding
MRO	Maintenance, Repair and Overhaul
MTOW	Maximum Take-Off Weight
NASA	National Aeronautics and Space Administration (US)
NATO	North Atlantic Treaty Organization
NBAA	National Business Aircraft Association (US)
OFT	Office of Fair Trading (UK)
PAPI	Precision Approach Path Indicator
PAR	Precision Approach Radar
pax	Passenger
P&W	Pratt & Whitney
PPL	Private Pilot's Licence
PR	Public Relations
RFP	Request for Proposals
RVR	Runway Visual Range
SARS	Severe Acute Respiratory Syndrome
SID	Standard Instrument Departure
STAR	Standard Terminal Arrival Route
STOL	Short Take-Off & Landing
TCAS	Traffic alert and Collision-Avoidance System
TWR	Tower – airport control tower
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rules
VMC	Visual Meteorological Conditions
VOR	VHF omni-directional range (radio beacons)



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3A	Monaco
3B	Mauritius
3C	Equatorial Guinea
3D	Swaziland
3X	Guinea
4K	Azerbaijan
4L	Georgia
4O	Montenegro
4R	Sri Lanka
4U	United Nations
4W	East Timor
4X	Israel
5A	Libya
5B	Cyprus
5H	Tanzania
5N	Nigeria
5R	Madagascar
5T	Mauritania
5U	Niger
5V	Togo
5W	Samoa
5X	Uganda
5Y	Kenya
6O	Somalia
6V	Senegal
6Y	Jamaica
7O	Yemen Republic
7P	Lesotho
7Q	Malawi
7T	Algeria
8P	Barbados
8Q	Maldives
8R	Guyana
9A	Croatia
9G	Ghana
9H	Malta
9J	Zambia
9K	Kuwait
9L	Sierra Leone
9M	Malaysia
9N	Nepal
9Q	Congo (Democratic Republic of)
9U	Burundi
9V	Singapore
9XR	Rwanda
9Y	Trinidad & Tobago
A2	Botswana
A3	Tonga
A4O	Oman
A5	Bhutan
A6	United Arab Emirates
A7	Qatar
A8	Liberia
A9C	Bahrain
AP	Pakistan
B	China
B	Republic of China (Taiwan)
B-H/K	China/Hong Kong

Code	Country Decode
B-M	China/Macau
C	Canada
C2	Nauru
C3	Andorra
C5	Gambia
C6	Bahamas
C9	Mozambique
CC	Chile
CN	Morocco
CP	Bolivia
CS	Portugal
CU	Cuba
CX	Uruguay
D	Germany
D2	Angola
D4	Cape Verde
D6	Comoros
DQ	Fiji
E3	Eritrea
E5	Cook Islands
E7	Bosnia and Herzegovina
EC	Spain
EI/EJ	Ireland
EK	Armenia
EP	Iran
ER	Moldova
ES	Estonia
ET	Ethiopia
EW	Belarus
EX	Kyrgyzstan
EY	Tajikistan
EZ	Turkmenistan
F	France
F-O	French Overseas Territories
F-OG	French West Indies
F-OH	Tahiti
G	United Kingdom
H4	Solomon Islands
HA	Hungary
HB	Liechtenstein
HB	Switzerland
HC	Ecuador
HH	Haiti
HI	Dominican Republic
HK	Colombia
HL	Republic of Korea
HP	Panama
HR	Honduras
HS	Thailand
HV	Vatican City
HZ	Saudi Arabia
I	Italy
J2	Djibouti
J3	Grenada
J5	Guinea-Bissau
J6	Saint Lucia
J7	Dominica
J8	Saint Vincent and the Grenadines
JA	Japan

Code	Country Decode
JU	Mongolia
JY	Jordan
LN	Norway
LQ/LV	Argentina
LX	Luxembourg
LY	Lithuania
LZ	Bulgaria
M	Isle of Man
N	United States of America
OB	Peru
OD	Lebanon
OE	Austria
OH	Finland
OK	Czech Republic
OM	Slovakia
OO	Belgium
OY	Denmark
OY	Faroe Islands
OY	Greenland
P	Democratic People's Republic of Korea
P2	Papua New Guinea
P4	Aruba
PH	Netherlands
PJ	Netherlands Antilles
PK	Indonesia
PP/PR/PT	Brazil
PZ	Surinam
RA	Russia
RDPL	Laos
RP-C	Philippines
S2	Bangladesh
S5	Slovenia
S7	Seychelles
S9	São Tomé and Príncipe
SE	Sweden
SP	Poland
ST	Sudan
SU	Egypt
SU-Y	Palestine
SX	Greece
T2	Tuvalu Island
T3	Kiribati
T7	San Marino
T8	Palau
TC	Turkey
TF	Iceland
TG	Guatemala
TI	Costa Rica
TJ	Cameroon
TL	Central African Republic
TN	Congo (Republic of)
TR	Gabon
TS	Tunisia
TT	Chad
TU	Ivory Coast
TY	Benin
TZ	Mali

Code	Country Decode
UK	Uzbekistan
UP	Kazakhstan
UR	Ukraine
V2	Antigua and Barbuda
V3	Belize
V4	Saint Kitts and Nevis
V5	Namibia
V6	Micronesia
V7	Marshall Islands
V8	Brunei
VH	Australia
VN	Vietnam
VP-A	Anguilla
VP-B/ VQ-B	Bermuda
VP-C	Cayman Islands
VP-F	Falkland Islands
VP-G	Gibraltar
VP-L	British Virgin Islands
VP-M	Montserrat
VQ-H	Saint Helen/Ascension
VQ-T	Turks and Caicos
VT	India
XA/ XB/XC	Mexico
XT	Burkina Faso
XU	Cambodia
XY	Myanmar
YA	Afghanistan
YI	Iraq
YJ	Vanuatu
YK	Syria
YL	Latvia
YN	Nicaragua
YR	Romania
YS	El Salvador
YU	Serbia
YV	Venezuela
Z	Zimbabwe
Z3	Macedonia
Z6	Kosovo (Republic of)
Z8	South Sudan
ZA	Albania
ZK	New Zealand
ZP	Paraguay
ZS/ZU	South Africa

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Antonov	An-124, An-148, An-158, An-178, An-225
ATR	ATR 42, ATR 72
BAE Systems	RJ70, RJ85, RJ100
British Aerospace	ATP, BAe 146, Jetstream 41
Boeing	707, 717, 727, 737, 747, 757, 767, 777, 787
Bombardier	Challenger 800/850, CRJ100, CRJ200, CRJ700, CRJ900, CRJ1000, CS100, CS300, Dash 8-Q400,
COMAC	ARJ-21, C919
de Havilland Canada	DHC-6 Twin Otter, Dash 7, Dash 8-100/-200/-300

Aircraft	Types
Dornier	Do 328
Douglas	DC-8
Embraer	EMB 120, ERJ 135, ERJ 140, ERJ 145, E170, E175, E190, E195, Legacy 600/650, Lineage 1000
Fokker	F28, Fokker 50, Fokker 70, Fokker 100
Ilyushin	Il-62, Il-86, Il-96, Il-114
Lockheed	L-1011 TriStar
McDonnell Douglas	DC-9, MD-10, MD-11, MD-80, MD-90
Mitsubishi	MRJ90
Saab	Saab 340, Saab 2000
Sukhoi	Superjet 100
Tupolev	Tu-134, Tu-154, Tu-204, Tu-214
Viking Air	DHC-6-400
Xian	MA600

We're delighted to welcome you to the latest edition of *Airline World's* Global Airline Guide. The data contained in this supplement has been very kindly supplied by airline intelligence specialist ch-aviation.

As a general rule, the country of origin of an airline can be determined by the nationality markings – established by ICAO and carried on an aircraft as part of its registration. This does, however, become slightly confusing when, for political reasons or for the purposes of leasing, airlines can display their country of registration rather than that of their employment.

Here, we present a concise reference source detailing the world's airlines, listed in alphabetical order by home nation.

To help find a particular carrier, the list on page 2 shows the ICAO code for the country as applied to its aircraft and listed in alphabetical order of prefix. Each entry then lists the operator along with, where applicable, their IATA two-letter and ICAO three-letter designators.

This year's guide covers more than 30,000 aircraft, spanning almost 85 different types and 360 variants. It lists scheduled and charter carriers, along with private companies and military air arms utilising airliner types for specialist applications. It also includes a selection of privately-owned large business aircraft (among them the Embraer Legacy 650, Airbus A319CJ and Boeing Business Jet), but does not feature smaller regional aircraft, vintage types or those where complete production lists are not available. A full breakdown of the types covered in this guide can be found in the adjacent table.

ch-aviation

Founded in Chur, Switzerland in 1998, ch-aviation has become an influential airline intelligence provider and a great Swiss aviation success story. Today, it welcomes more than 1.2 million users each year and is proud to count hundreds of companies in the airline industry as its customers. Yet, it is still small enough to care about the details that have always made the difference between good and outstanding data. ch-aviation's fully customisable databases include:

- Detailed and summarised data on the current status of over 42,150 aircraft, updated weekly and including owner and manager, operator, age, engines, status.
- Airline database tracking the status of over 3,980 active operators, sortable by aircraft type, country, continent and type of operations. This also features start-up tracking including address and contact details, and the most extensive directory of reservation system vendors and users.
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- Airport database, listing location, IATA and ICAO codes and airfield information for over 6,000 airports worldwide. Detailed reports on operators, schedules, route network and capacity.

www.ch-aviation.com



The data summarises the type and fleet numbers of a particular airline and is correct as of August 16, 2016. It lists aircraft in service or due for imminent delivery, although changes will have inevitably occurred between data extract and publication. Those on wet-lease or ACMI contracts are listed with the company from which they are leased, rather than the lessee.



Operator	IATA	ICAO	Model and Count
Afghanistan			
Afghan Jet International	AJA		CRJ200LR (1)
Ariana Afghan Airlines	AFG	FG	A310-300 (2), 737-400 (3)
Kam Air	KMF	RQ	767-200 (1), MD-82 (1), MD-83 (2), MD-87 (2)
Safi Airways	SFW	4Q	A319-100 (1), A320-200 (1), 767-200ER (1)
Albania			
Albawings	AWT	2B	737-500 (1)
Algeria			
Air Algérie	DAH	AH	A330-200 (8), ATR 72-500 (12), ATR 72-600 (3), 737-600 (5), 737-700C (1), 737-800 (21), 767-300 (3)
Forces Aériennes Algériennes	KJD		ACJ340-500 (1), ATR 72-600 (2)
Star Aviation (Algeria)			DHC-6-300 (2)
Tassili Airlines	DTH	SF	737-800 (4), Dash 8-Q200 (4), Dash 8-Q400 (4)
Angola			
AeroJet (Angola)	MBC		EMB 120ER (1), ERJ 145LR (1)
Air 26	DCD		EMB 120RT (3), ERJ 135LR (2), ERJ 145EP (1)
Air Jet	MBC		Jetstream 41 (3), EMB 120ER (1), EMB 120RT (2)
Angola Air Services			Do328-300 (1)
Força Aérea Nacional Angolana			Legacy 600 (1)
Guicango	NCL		EMB 120ER (1)
Heli Malongo			Dash 8-Q300 (1), Dash 8-Q400 (5)
SonAir	SOR		737-700 (2), DHC-6-300 (9)
TAAG Angola Airlines	DTA	DT	737-700 (4), 737-700QC (1), 777-200ER (3), 777-300ER (4)
Antigua and Barbuda			
LIAT	LIA	LI	ATR 42-600 (5), ATR 72-600 (4)
Argentina			
Aerolíneas Argentinas	ARG	AR	A330-200 (8), A340-300 (7), 737-700 (16), 737-800 (23)
American Jet (Argentina)			ATR 42-300 (1)
Andes Líneas Aéreas	ANS	OY	MD-83 (5), MD-88 (1)
Armada Argentina			DHC-6-200 (1), DHC-6-300 (1), F28-1000C (1)
Austral	AUT	AU	E190-100IGW (2), E190-100LR (24)
Fuerza Aérea Argentina			737-500 (1), DHC-6-200 (7), F28-1000C (3)
LADE - Líneas Aéreas del Estado			Saab 340B (4)
LATAM Airlines Argentina	DSM	4M	A320-200 (14), 767-300ER (2)
TAPSA Aviación	TPS	V8	DHC-6-300 (1)
Armenia			
Armenia Aircompany	NGT	RM	737-500 (1), 737-700 (1)
Armenian Air Force			ACJ319-100 (1)
Atlantis European Airways	LUR	TD	A320-200 (1)
South Airlines (Armenia)	STH		737-200C (1), 747-200FSCD (2)
Taron Avia	TRV	H7	737-500 (2)
Vertir Airlines	VRZ		A300-600R (1)
Aruba			
AEG Air			Legacy 600 (1)
Aruba Airlines	ARU	AG	A320-200 (3)
Comlux Aruba	CXB		767-200ER (1), 777-200LR (1)

Operator	IATA	ICAO	Model and Count
HWC Aviation			Legacy 600 (1)
Insel Air Aruba	NLU	8I	Fokker 70 (5), MD-82 (1), MD-83 (3)
Itera Holdings			737-700 BBJ (1)
Orex Aviation			737-700 BBJ (1)
Whitetail Aviation			Legacy 600 (1)
Australia			
Air South			EMB 120ER (1), EMB 120RT (1)
Airnorth (Australia)	ANO	TL	EMB 120ER (1), EMB 120RT (5), E170-100LR (5)
Alliance Airlines	UTY	QQ	Fokker 100 (17), Fokker 50 (5), Fokker 70 (9)
AVWest			DHC-6-400 (1)
Cobham Aviation Services Australia	NJS		717-200 (20)
Corporate Air (Australia)		FC	Saab 340B Plus (3)
Eastern Australia Airlines	EAQ		Dash 8-200 (2), Dash 8-300 (1), Dash 8-Q200 (1), Dash 8-Q300 (15)
Express Freighters Australia	EFA		737-300F (4), 767-300ERF (1)
JetEx (Cobham Aviation Services)	JTE		RJ100 (5), RJ85 (2), BAe 146-100 (1), BAe 146-100QC (1), BAe 146-200 (1), BAe 146-300 (2), BAe 146-300QT (3), E190-100LR (1)
JetGo Australia	JGO	JG	ERJ 135LR (3), ERJ 140LR (3)
Jetstar Airways	JST	JQ	A320-200 (53), A321-200 (6), 787-8 (11)
Maroomba Airlines			Dash 8-100 (4)
Network Aviation	NWK		Fokker 100 (14)
Palmar (Australia)			MD-82 (2)
Pearl Aviation Australia			MD-82 (2), Do328-100 (5)
Pel-Air Aviation	PFY		Saab 340A (1), Saab 340AF (3)
Qantas	QFA	QF	A330-200 (18), A330-300 (10), A380-800 (12), 737-800 (67), 747-400 (5), 747-400ER (6)
REX - Regional Express	RXA	ZL	Saab 340B (30), Saab 340B Plus (21)
Royal Australian Air Force	ASY		A330-200 (2), A330-200MRTT (5), 737-700 BBJ (8)
Seair Pacific			DHC-6-100 (2)
Skippers Aviation		HK	Dash 8-100 (4), Dash 8-300 (4), Dash 8-Q300 (2), EMB 120ER (6), Fokker 100 (2)





Operator	IATA	ICAO	Model and Count
Skyforce Aviation	SFZ		BAe 146-200 (1), BAe 146-200QC (1), BAe 146-200QT (1)
Skytraders	SND		ACJ319-100 (2)
Skytrans	SKP		Dash 8-100 (4)
Southern Cross Jets			Legacy 600 (1)
Sunstate Airlines	SSQ		Dash 8-Q400 (31)
Surveillance Australia	BDF		Dash 8-200(MPA) (6), Dash 8-300(MPA) (1), Dash 8-Q200 (1), Dash 8-Q300(MPA) (3)
Tasman Cargo Airlines	TMN	HJ	757-200PCF (1)
Tigerair Australia	TGG	TT	A320-200 (14), 737-800 (3)
Toll Aviation	TFX		ATR 42-300F (2)
Virgin Australia	VOZ	VA	A330-200 (6), ATR 72-500 (6), ATR 72-600 (8), 737-700 (2), 737-800 (55), E190-100IGW (13)
Virgin Australia International	VAU	VA	737-800 (19), 777-300ER (5)
Virgin Australia Regional	OZW	XR	A320-200 (2), Fokker 100 (14)
Austria			
ART Aviation			737-700 BBJ (1)
Austrian Airlines	AUA	OS	A319-100 (7), A320-200 (16), A321-100 (3), A321-200 (3), 767-300ER (6), 777-200ER (5), Dash 8-Q400 (18), E190-200LR (10), Fokker 100 (10), Fokker 70 (5)
Avcon Jet	AOJ		ACJ318-100 (1), Challenger 850 (1), Legacy 600 (2), Legacy 650 (3)
Europ Star Aircraft			Legacy 600 (2)
Eurowings Europe	EWE	E2	A320-200 (2)
Global Jet Austria	GLJ		ACJ319-100 (1), 737-700 BBJ (1)
International Jet Management	IJM		Challenger 850 (1), Legacy 600 (1), Lineage 1000 (1)
MJet Aviation	MJF		ACJ319-100 (1), Legacy 600 (1), Fokker 100 (1)
Niki	NLY	HG	A319-100 (5), A320-200 (12), A321-200 (2)
People's Viennaline	PEV	PE	E170-100STD (1)
Tyrol Air Ambulance	TYW		Do328-100 (1)
Tyrolean Jet Service	TJS		ACJ318-100 (1), ACJ319-100 (2)
Welcome Air	WLC	2W	Do328-100 (1)
Azerbaijan			
AZAL Azerbaijan Airlines	AHY	J2	A319-100 (3), A320-200 (7), A340-500 (2), ACJ319-100 (1), ACJ320-200 (1), ACJ340-600 (1), 757-200 (4), 767-300ER (3), 787-8 (2), E170-100LR (1), E190-100AR (4), Tu-154M (1)
Azerbaijani Air and Air Defence Force			Tu-134AK (1)
Silk Way Airlines	AZQ	ZP	An-124-100 (1)
Silk Way West Airlines	AZG	7L	747-400FSCD (2), 747-8F (3)
SW Business Aviation	ESW		ATR 42-500 (1)
Bahamas			
Bahamasair	BHS	UP	ATR 42-600 (2), ATR 72-600 (2), 737-500 (3)
Sky Bahamas	SBM	Q7	Saab 340A (2) Saab 340B (1)
Western Air Bahamas	WST		Saab 340A (8)
Bahrain			
Bahrain Defence Force	BFW		RJ100 (1), RJ85 (2)

Operator	IATA	ICAO	Model and Count
Bahrain Royal Flight	BAH		727-200RE (1), 737-800 (1), 747-400 (2), 767-400ER (1)
Bexair	BXA		Legacy 600 (1)
Comlux Middle East			ACJ318-100 (1)
DHL International Aviation Middle East	DHX	ES	757-200PCF (3), 767-200SF (2)
Gulf Air	GFA	GF	A320-200 (16), A321-200 (6), A330-200 (6)
Texel Air	XLR		737-300F (3)
Bangladesh			
Biman Bangladesh Airlines	BBC	BG	A310-300 (2), 737-800 (4), 777-200ER (2), 777-300ER (4), Dash 8-Q400 (2)
Easy Fly Express	EFX	8E	Saab 340AF (1)
Hello Airlines (Bangladesh)		H3	ATR 42-300QC (1)
NovoAir	NVQ	VQ	ATR 72-500 (3), ERJ 145EU (3)
Regent Airways	RGE	RX	737-700 (2), 737-800 (1), Dash 8-Q300 (2)
SkyAir	AHW		737-200F (1), Fokker 50F (1)
United Airways	UBD	4H	ATR 72-200 (3), Dash 8-100 (1), MD-83 (5)
US-Bangla Airlines	UBG	BS	Dash 8-Q400 (3)
Belarus			
Belavia	BRU	B2	737-300 (8), 737-500 (6), 737-800 (2), 737-800 BBJ (1), 767-300ER (1), Challenger 850 (1), CRJ200ER (2), CRJ200LR (2), E170-200LR (2), E190-200LR (2), Tu-154M (4)
Rada Airlines	RDA		Il-62M (1)
Trans Avia Export	TXC	AL	747-200FSCD (1), 747-200BSF (1), 747-300SF (1)
Belgium			
ASL Airlines Belgium	TAY	3V	737-300F (2), 737-400F (13), 737-400SF (1), 747-400ERF (4), 757-200 (1), 757-200PCF (1), 757-200PF (1), 777-200F (3)
ASL airtaxi	BNJ		Legacy 650 (1)
Belgian Air Component	BAF		ERJ 135LR (2), ERJ 145LR (2)
Brussels Airlines	BEL	SN	A319-100 (21), A320-200 (9), A330-200 (3), A330-300 (6), RJ100 (11)
Flying Service	FYG		Lineage 1000 (1)
Jetairfly	JAF	TB	737-700 (7), 737-800 (14), 767-300ER (1), 787-8 (1), E190-100STD (3)
Thomas Cook Airlines Belgium	TCW	HQ	A320-200 (5)



AT A GLANCE

Airline Start-ups 2015



Company	Country
ACASS Europe	San Marino
Aeroec	Ecuador
Air Algérie Services	Algeria
Air Daytona Tourists Airlines	Botswana
Air Djibouti	Djibouti
Air Guinée-Bissau	Guinea Bissau
Air KG	Kyrgyzstan
Air Mancora	Peru
Air Mediterranean	Greece
Air Seoul	South Korea
AirInter 1	Chad
airly.	Australia
Airnavia	Denmark
AirSud	Italy
Albanian Airways	Albania
Albatros Connection	United States of America
Alieurope	Malta
Alliance Aviation Slovakia	Slovak Republic
Al-Rafedain Falcon Airlines	Iraq
Aluu Airlines	Greenland
Amazsonas del Paraguay	Paraguay
Andorra Airlines	Spain
Aspan Jet Airlines	Kazakhstan
Atacamaair	Chile
Ava Air	Martinique
Aviatsa	Honduras
Baracuda Airways	Kenya
Beacon	United States of America
Binter CV	Cape Verde
Blue Sky Airways (Australia)	Australia
BlueWater Seaplane	Indonesia
Bright Flight	Bulgaria
BrightStar Express Airlines	China
Britannia Express	United Kingdom
Buffair Services	Kenya
CargoLogicAir	United Kingdom
Carib-South Airways	United States of America
China Air Cargo	China
Cobalt	Cyprus
Colorful Guizhou Airlines	China
Community AirlinK	United States of America
Crystal Luxury Air	United States of America
Delux Public Charter	United States of America
EACS Aviation (Malta)	Malta
Elevate	Australia

Company	Country
EMEY Airlines	Egypt
Empire Aviation San Marino	San Marino
Eurowings Europe	Austria
Express Air Cargo	Tunisia
ExtraJet	United Kingdom
Fastjet Zimbabwe	Zimbabwe
Firnas Airways	United Kingdom
Flugfélag Austurlands	Iceland
Fly 365 Aviation	Romania
Fly Baghdad	Iraq
Fly County Aviation	Kenya
Fly Erbil	Iraq
Fly Salone	United Kingdom
Fly Viking	Norway
FlyDamas	Syria
FlyDenim	Netherlands
FlyIndico	Mozambique
FLYmii Airlines	Portugal
flymojo	Malaysia
Free Falcon Air	Libya
GainJet Ireland	Ireland
Global Airlines (Taiwan)	Taiwan
Global Airways (Lithuania)	Lithuania
Haifu Airlines	China
HaiXiang Air	China
Hongtu Airlines	China
Indico Helicopteros	Mozambique
Instantair	Netherlands
Interjet West	United States of America
Ivoire Executive	Ivory Coast
Jet Asia International	Pakistan
Jet Set Air Direct	Norway
JetSuite X	United States of America
Jiangsu Airlines	China
Joy Luzhou Air	China
Kestrel Airlines	Malaysia
Kinmen Airlines	Taiwan
Kokomo Resort Fiji	Fiji
LaMia Bolivia	Bolivia
LAW - Latin American Wings	Chile
León Airlines	Spain
Madagasikara Airways	Madagascar
Maluti Sky	Lesotho
March Operations	United States of America
MCS AeroCarga	Mexico

Company	Country
Meezab Aviation	Pakistan
Mission Aviation Fellowship of Liberia	Liberia
MySky	Bosnia-Herzegovina
Nasim Air	Iran
Naxosair	Greece
Nesma Airlines (Saudi Arabia)	Saudi-Arabia
NewLeaf	Canada
Nextjet Canada	Canada
Nordic Flyways	Estonia
Nordic Seaplanes	Denmark
Nordica	Estonia
North Shore Air	New Zealand
Northeast Airlines	China
Norwegian UK	United Kingdom
O.T. Global	United Kingdom
Originair	New Zealand
Orion Airways	Cyprus
PanAfriqiyah	Malta
PeopleFly	Italy
Rada Airlines	Belarus
Rahila Air	Libya
Regional Jet	Estonia
Regional Sky	United States of America
Rhodian Air	Greece
Royal Fly-Gh	Ghana
Rudufu	Kenya
S-Air Salzburg	Austria
SAN-TA	Colombia
Sea Air (Croatia)	Croatia
Sepehran Airlines	Iran
Sis Aviation	Macedonia
Sky Prime Aviation Services	Saudi-Arabia
SkyAtlantic Airlines	Venezuela
Skycity Airlines	Spain
Skylar Airways	Thailand
Skylux Avia	Ukraine
Small Planet Airlines Germany	Germany
SmileAir	Ghana
Spice Island Air	Tanzania
StarSom Air	Somalia
SW Italia	Italy
Swazi Airways	Swaziland
Tehran Airlines	Iran
Texas Air Shuttle	United States of America
Texel Air	Bahrain
Tonga Airways	Tonga
Tongcheng Airlines	China
Transcarga Panama	Panama
Tropical Air Gabon	Gabon
Turpial Airlines	Venezuela
Tus Airways	Cyprus
UVT aero	Russia
Valorfly	Malta
Virgin Atlantic International	United Kingdom
Vista Malta	Malta
VistaJet (China)	China
VivaLatinoamérica	Costa Rica
VVB Aviation Malta	Malta
WawJet	Guinea
Wings of the Nile	Egypt
Xichang Airlines	China
ziNG Airlines	Canada



Operator	IATA	ICAO	Model and Count
Belize			
Tropic Air	TOS	9N	DHC-6-100 (1)
Benin			
Forces Aériennes du Benin			727-200 (1), DHC-6-300 (1)
Bermuda			
Artjet			Legacy 650 (1)
Avenir World			737-700 BBJ (1)
Bayham Holdings			737-800 BBJ (1)
Brisair	LGT		DC-8-62 (1), DC-8-72 (1)
Longtail Aviation			737-700 BBJ (1)
Planair			Legacy 600 (1), Legacy 650 (2)
The Trump Organization			757-200 (1)
Usal			737-700 BBJ (1)
Worldwide Aircraft Holding			747-8 BBJ (1), 747SP (1)
Bhutan			
Bhutan Airlines	BTN	B3	A319-100 (2)
Druk Air	DRK	KB	A319-100 (3), ATR 42-500 (1)
Bolivia			
Amazonas	AZN	Z8	CRJ200ER (1), CRJ200LR (6)
BoA - Boliviana de Aviación	BOV	OB	737-300 (13), 737-700 (4), 737-800 (2), 767-300ER (3), CRJ200LR (2)
EcoJet	ECO	8J	RJ85 (4)
Fuerza Aérea Boliviana			737-200 (6), 737-300 (1), BAe 146-200 (7), MA-60 (2)
LaMia Bolivia			RJ85 (3)
Minera San Cristóbal			BAe 146-200 (1)
Transportes Aéreos Bolivianos	BOL	2L	DC-10-10F (1), DC-10-30F (1), MD-10-30F (1)
Botswana			
Air Botswana	BOT	BP	ATR 42-500 (3), ATR 72-500 (1)
Botswana Defence Force			Do328-100 (1)

Operator	IATA	ICAO	Model and Count
Brazil			
Avianca Brasil	ONE	O6	A318-100 (15), A319-100 (4), A320-200 (26), A330-200F (1)
Azul Linhas Aéreas Brasileiras	AZU	AD	A330-200 (5), ATR 72-600 (45), E190-100IGW (10), E190-100LR (3), E190-200IGW (66)
Banco Safra			737-700 BBJ (1)
Brascoota			DC-8-73F (1)
Brasil Warrant Administração de Bens			Legacy 650 (1)
C Fly Aviation			Legacy 600 (1)
CB Air Tâxi Aéreo			Legacy 600 (1), Legacy 650 (1)
CBMM - Companhia Brasileira de Metalurgia e Mineração			Legacy 600 (1)
Clube Náutico Agua Limpa			737-300 (1)
Colt Cargo	XCA		737-400F (2), 757-200SF (1)
Cristália Produtos Químicos Farmacêuticos			Legacy 600 (1)
Flyways Linhas Aéreas	FYW		ATR 72-500 (1)
Força Aérea Brasileira		FAB	ACJ319-100 (1), 767-300ER (1), EMB 120ER (11), EMB 120ERQC (1), EMB 120RT (7), Legacy 600 (4), Lineage 1000 (2), ERJ 135LR (4), ERJ 145ER (7), ERJ 145LR (1), ERJ 145RS (3), ERJ 145SA (5)
GENSA - General Servicos Aéreos	GEN		EMB 120ER (1), EMB 120RT (1)
Global Tâxi Aéreo			Legacy 600 (1)
Gol Linhas Aéreas Inteligentes	GLO	G3	737-700 (34), 737-800 (92)
Grupo Doria			Legacy 650 (1)
Grupo Estrutural			Legacy 650 (1)
Imetame Group			ATR 72-200 (1)
Itaú Unibanco			Legacy 650 (1)
JBS			Legacy 600 (1)
Kia Motors do Brasil			Legacy 600 (1)
LATAM Airlines Brasil	TAM	JJ	A319-100 (24), A320-200 (77), A321-200 (31), A350-900 (3), 767-300ER (14), 777-300ER (10)
LATAM Cargo Brasil	LTG	M3	767-300ERF (3)
Latin Air Cargo			DC-10-30F (1)
Lojas Riachuelo			Legacy 650 (1)
MacBens Patrimonial			Legacy 650 (1)
MAP Linhas Aéreas	PAM		ATR 42-300 (2), ATR 72-200 (2)
Modern Logistics	MWM		737-400F (1)
Neo Taxi Aéreo			Legacy 650 (1)
Passaredo Linhas Aéreas	PTB	2Z	ATR 72-500 (9), ATR 72-600 (4)
Piquiatuba Transportes Aéreos			EMB 120ER (2)
Polícia Federal Brasil			ERJ 145ER (1), ERJ 145LR (1)





Airline alliances 2015

At a glance

STAR ALLIANCE

Adria Airways	Avianca	SAS Scandinavian Airlines
Aegean Airlines	Brussels Airlines	Shenzhen Airlines
Air Canada	Copa Airlines	Singapore Airlines
Air China	Croatia Airlines	South African Airways
Air India	EgyptAir	Swiss International Air Lines
Air New Zealand	Ethiopian Airlines	TAP Portugal
ANA - All Nippon Airways	EVA Air	Thai Airways International
Asiana Airlines	LOT Polish Airlines	Turkish Airlines
Austrian Airlines	Lufthansa	United Airlines

ONEWORLD

airberlin	Iberia	Qantas
American Airlines	JAL - Japan Airlines	Qatar Airways
British Airways	LATAM Airlines Brasil	Royal Jordanian
Cathay Pacific	LATAM Airlines Chile	S7 Airlines
Finnair	Malaysia Airlines	SriLankan Airlines

SKYTEAM

Aeroflot	China Eastern Airlines	Korean Air
Aerolineas Argentinas	China Southern Airlines	MEA - Middle East Airlines
AeroMéxico	CSA Czech Airlines	Saudia
Air Europa	Delta Air Lines	Tarom
Air France	Garuda Indonesia	Vietnam Airlines
Alitalia	Kenya Airways	Xiamen Airlines
China Airlines	KLM Royal Dutch Airlines	



U-FLY

Eastar Jet	Lucky Air (China)	West Air (China)
HK Express	Urumqi Air	

VALUE ALLIANCE

Cebu Pacific Air	NokScoot	Tigerair Australia
Jeju Air	Scoot	Vanilla Air
Nok Air	Tigerair	



Operator	IATA	ICAO	Model and Count
Rico Taxi Aéreo			EMB 120RT (1)
Rio Linhas Aéreas	RIO		727-200F (5), 737-400F (1)
São Conrado Taxi Aéreo			Legacy 600 (1)
SETE Taxi Aéreo			EMB 120ER (1)
Sideral Air Cargo	SID		ATR 42-300 (1), 737-300F (2), 737-300QC (1), 737-400F (3), 737-400SF (1)
Sociedade Administradora e Gestao Patrimonial			Legacy 650 (1)
Sterna Linhas Aéreas	STR		A300B4F (1)
Total Linhas Aéreas	TTL		ATR 42-500 (4), 727-200F (5)
Urban Incorporações			Legacy 600 (1)
Vale			Legacy 600 (1), E190-100IGW (1), ERJ 135LR (1)

British Virgin Islands

Orion Aircraft Holdings			737-700 BBJ (1)
Talos Aviation			737-700 BBJ (1), 757-200 (1)

Brunei

Royal Brunei Airlines	RBA	BI	A320-200 (6), 787-8 (4)
Sultan's Flight			A340-200 (1), 747-400 (1), 767-200ER (1), 787-8 BBJ (1)

Bulgaria

Air Via	VIM	VL	A320-200 (1), A321-200 (1)
ALK Airlines			Fokker 100 (2), MD-82 (1)
Avioretachment 28, Bulgarian Government	BGF		A319-100 (1)
BH Air - Balkan Holidays Air	BGH	8H	A319-100 (1), A320-200 (5), A321-200 (1), A330-200 (1)
Bright Flight			ATR 42-300F (1), BAe 146-200 (1)
Bulgaria Air	LZB	FB	A319-100 (2), A320-200 (3), RJ70 (1), 737-300 (2), BAe 146-200 (1), E190-100AR (4)
Bulgarian Air Charter	BUC	H6	A320-200 (1), MD-82 (12), MD-83 (1)
Cargo Air	CGF		737-300F (3), 737-400F (4)

Burkina Faso

Air Burkina	VBW	2J	E170-100STD (2)
Colombe Airlines	CBL		ATR 72-200QC (1), MD-83 (1)
Force Aérienne de Burkina Faso			727-200RE (1)

Burundi

Air Burundi	PBU	8Y	MA-60 (1)
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Cambodia

Bassaka Air	BSX	5B	A320-200 (2)
Cambodia Angkor Air	KHV	K6	A321-200 (2), ATR 72-500 (2)
Cambodia Bayon Airlines	BYC	BD	MA-60 (2)
Royal Cambodian Air Force			A320-200 (1), MA-60 (2)
Sky Angkor Airlines	SWM	ZA	A320-200 (2), A321-200 (1)

Cameroon

Air Leasing Cameroon			F28-4000 (1)
Camair-Co	CRC	QC	737-700 (2), 767-300ER (1), MA-60 (2)
Elysian Airlines	GIE	E4	BAe 146-200 (1)
Section Liaison Air Yaoundé			MA-60 (1)

Canada

Adlair Aviation			DHC-6-200 (1)
Air Canada	ACA	AC	A319-100 (18), A320-200 (42), A321-200 (15), A330-300 (8), 767-300ER (16), 777-200LR (6), 777-300ER (19), 787-8 (8), 787-9 (13), E190-100IGW (25)
Air Canada rouge	ROU	RV	A319-100 (20), A321-200 (5), 767-300ER (18)
Air Creebec	CRQ	YN	Dash 8-100 (14), Dash 8-300 (1)
Air Georgian	GGN	ZX	CRJ100ER (6), CRJ200ER (11), CRJ200LR (1)
Air Inuit	AIE	3H	737-200C (2), DHC-6-300 (7), Dash 8-100 (1), Dash 8-300 (4), Dash 8-300F (2), Dash 8-Q300 (5)
Air Labrador	LAL	WJ	DHC-6-300 (8)
Air North	ANT	4N	ATR 42-300QC (2), 737-200QC (1), 737-400 (1), 737-500 (4)
Air Tindi		8T	DHC-6-300 (5), Dash 7-100 (5)
Air Transat	TSC	TS	A310-300 (9), A330-200 (10), A330-300 (4), 737-800 (7)
Aklak Air	AKK	6L	DHC-6-300 (1)
Alberta Central Airways			DHC-6-300 (2)
Calm Air	CAV	MO	ATR 42-300 (7), ATR 72-200 (1), ATR 72-200QC (3), Do328-300 (2)
Canadian Flyers International			DHC-6-300 (1)

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Operator	IATA	ICAO	Model and Count
Canadian North	MPE	5T	737-200 (1), 737-200C (4), 737-300 (9), 737-300QC (1), Dash 8-100 (2)
Cargojet Airways	CJT	W8	727-200F (7), 757-200PCF (5), 767-200ERF (1), 767-300ERBCF (3), 767-300ERF (5)
Central Mountain Air	GLR	9M	Dash 8-300 (1), Do328-100 (3)
Chartright Air	HRT		MD-87 (1)
Connect Air (Canada)			Saab 340B (1)
Enerjet	ENJ	EG	737-700 (1)
First Air	FAB	7F	ATR 42-300 (3), ATR 42-300QC (4), ATR 42-500 (5), 737-400 (1), 737-400C (3)
Flair Airlines	FLE	F8	737-400 (5), Do328-100 (1), E170-200LR (1)
Flightexec	FEX		Challenger 850 (1)
Glencore Canada	RAG		737-200C (2)
Hawkair Aviation Services	HAW		Dash 8-100 (2)
Hydro-Québec	APZ	0Q	Dash 8-300 (1), Dash 8-Q400 (2)
Jazz Air	JZA	QK	CRJ200ER (5), CRJ200LR (9), CRJ705ER (16), Dash 8-100 (22), Dash 8-300 (28), Dash 8-Q400 (38)
Kenn Borek Air	KBA	4K	DHC-6-100 (1), DHC-6-300 (15), DHC-6-400 (1)
KF Cargo	KFA	FK	737-300 (1), DC-10-30F (2)
Morningstar Air Express	MAL		ATR 72-200F (1), 757-200SF (6)
NAV Canada	NVC		CRJ200ER (2), Dash 8-100 (1)
Nolinor Aviation	NRL	N5	737-200C (3), 737-200F (1), 737-200QC (1), 737-300QC (1)
North Cariboo Air	NCB		RJ100 (2), Dash 8-300 (2), Dash 8-Q300 (2)
North-Wright Airways	NWL	HW	DHC-6-100 (1), DHC-6-300 (1)
NovaJet	NOJ		CRJ200ER (1)
NRC National Research Council			DHC-6-200 (1)
Ontario MNR Aviation Services	TRI		DHC-6-200 (1), DHC-6-300 (5)
Pacific Coastal Airlines	PCO	8P	Saab 340A (4), Saab 340B (2)
Pacific Sky Aviation			DHC-6-400 (1)
PAL Airlines (Canada)	SPR	PB	DHC-6-300 (6), Dash 8-100 (7), Dash 8-300 (2), Dash 8-Q300 (3)
Perimeter Aviation	PAG	YP	Dash 8-100 (3), Dash 8-300 (1), Dash 8-Q300 (1)
Porter Airlines	POE	PD	Dash 8-Q400 (26)
Pratt & Whitney Canada	PWC		747SP (2), Do328-300 (1)
Province of Manitoba			DHC-6-300 (2)
Quebec - Service Aérien Gouvernemental	QUE		Dash 8-Q200 (1), Dash 8-Q300 (1)

Operator	IATA	ICAO	Model and Count
R1 Airlines	TSH		Challenger 800 (1), CRJ100ER (1), CRJ200LR (1), CRJ701 (1), Dash 8-100 (1), Dash 8-Q200 (1), Dash 8-Q300 (1)
Royal Canadian Air Force	CFC		A310-300 (1), A310-300F (1), A310-300MRTT (3), DHC-6-300 (4), Dash 8-100 (4)
Royal Canadian Mounted Police			DHC-6-300 (1)
SGL - Sander Geophysics			DHC-6-300 (1)
Sky Lift Aviation			DHC-6-100 (1)
Sky Regional Airlines	SKV	RS	Dash 8-Q400 (5), E170-200SU (20)
Skycharter			Challenger 850 (1)
Skyservice Business Aviation	SYB		737-500 (1)
South Nahanni Airways			DHC-6-100 (1)
Summit Air Charters			RJ85 (2), ATR 72-200 (2), ATR 72-200F (2), DHC-6-200 (1), DHC-6-300 (2), Dash 8-100 (2)
Suncor Energy			CRJ900ER (3)
Sunwest Aviation	CNK		Dash 8-Q200 (1), Dash 8-Q300 (4)
Sunwing Airlines	SWG	WG	737-800 (17)
Trans Capital Air			Dash 7-100 (12)
Transport Canada	TGO		Dash 7-100 (1), Dash 8-100 (2)
Transwest Air			DHC-6-100 (2), DHC-6-200 (2), Saab 340AQC (1), Saab 340B (3)
Voyageur Airways	VAL	VC	CRJ200ER (2), CRJ200LR (5), Dash 7-100 (3), Dash 8-100 (2), Dash 8-300 (4), Dash 8-Q300 (1)
Wasaya Airways	WSG	WT	Dash 8-Q300 (1)
West Coast Air			DHC-6-200 (2)
West Wind Aviation	WEW		ATR 42-300 (5), DHC-6-100 (1), DHC-6-200 (3), DHC-6-300 (2)
WestJet	WJA	WS	737-600 (13), 737-700 (57), 737-800 (43), 767-300ER (4)
WestJet Encore	WEN	WR	Dash 8-Q400 (30)
Cape Verde			
TACV - Cabo Verde Airlines	TCV	VR	ATR 42-500 (1), ATR 72-500 (2), 757-200 (1)
Cayman Islands			
Al Nahla Aviation			Legacy 600 (1)
Cayman Airways	CAY	KX	737-300 (4)
Cayman Airways Express	CAY	KX	737-300 (4), DHC-6-300 (2), Saab 340B Plus (1)
Peridot Associated			737-900 BBJ (1)
Central African Republic			
Karinou Airlines	KRN	U5	737-200 (1), 737-300 (1)
Chad			
AirInter 1	HRV		737-500 (2), DC-8-73F (1)
Avmax Chad			Dash 8-300 (2)
CHC Tchad			DHC-6-300 (1)
Force Aérienne Tchadienne			ATR 42-300 (1), 737-700 BBJ (1), MD-87 (1)
RJM Aviation			EMB 120RT (1)
Chile			
Aerocord			DHC-6-300 (1)
Aerovías DAP	DAP	V5	RJ85 (2), 737-200 (4), BaE 146-200 (2), DHC-6-300 (1)
Atacamair			737-400 (1)
Barrick Servicios Mineros			DHC-6-400 (1)
Chilean Airways	DTO		737-200 (2), 737-400 (1)
Chilejet		H8	737-300 (1)
Fuerza Aérea de Chile			707-300C (1), 737-300QC (1), 737-500 (1), 767-300ER (1), DHC-6-100 (4), DHC-6-300 (8)





At a glance

Airline failures 2015

Company	Country	Merged
7th Sky	Kazakhstan	
Adriatic Skyways	Croatia	
Aerocaribbean	Cuba	Cubana
Aerocon	Bolivia	
Air Lituanica	Lithuania	
Air Melbourne	Australia	
AirAsia Philippines	Philippines	Philippines AirAsia
AirAsia Zest	Philippines	Philippines AirAsia
Ak Bars Aero	Russia	
Alberta Government Air Transportation Services	Canada	
Alitalia Express	Italy	
Amsair	UK	Air Charter Scotland
Appalachian Air	US	
Aviogenex	Serbia	
B&H Airlines	Bosnia-Herzegovina	
BizAir Shuttle	US	
Blue 1	Finland	CityJet
CanJet Airlines	Canada	
Carpatair Flight Service	Romania	Carpatair
Caspiy	Kazakhstan	
Cyprus Airways	Cyprus	
DAT Lite	Lithuania	
ES-air	Denmark	
Estonian Air	Estonia	
EuroLOT	Poland	
Falcon Air Express	US	
Fil-Asian Airways	Philippines	
Fitoplant	Romania	
FlyDenim	Netherlands	
Flytaxi Nord	Norway	Viking Air Norway
flyvista	Georgia	
Freedom Air (USA)	Guam	
Georgian Star International	Georgia	
Guinea Lineas Aéreas	Equatorial Guinea	
Hangar8 Management	UK	Gama Aviation
Hermes Aviation	Malta	
HiAir	UK	
HolidayJet	Switzerland	
InterSky	Austria	
Island Airlines	US	
KAPO Aviakompania	Russia	

Company	Country	Merged
Keystone Air Service	Canada	Wings over Kissing
Korongo Airlines	Congo Kinshasa	
Kyrgyz Trans Avia	Kyrgyzstan	
LAC - Lignes Aériennes Congolaises	Congo Kinshasa	
León Airlines	Spain	
Linfox Aircraft Charter	Australia	
Links Air	UK	
Majestic Executive Aviation	Austria	
Midex Airlines	UAE	
New Mexico Airlines	US	
Nordic Flyways	Estonia	
Nordic Global Airlines	Finland	
Osprey Wings	Canada	West Wind Aviation
Pacific Wings	US	
PAL Airlines	Chile	
PEOPLExpress	US	
Quick Duck Airlines	Slovak Republic	
Seabird Airlines	Turkey	
SETE Linhas Aéreas	Brazil	SETE Táxi Aéreo
Sky Bishkek	Kyrgyzstan	
Skygreece Airlines	Greece	
Snowbird Airlines	Finland	
SomAir	Somalia	
Southeast Airlines (Kenya)	Kenya	
Syphax Airlines	Tunisia	
Tanganyika Flying	Tanzania	Coastal Aviation
Tomskavia	Russia	
Toumaï Air Tchad	Chad	
Transaero Airlines	Russia	
Transportes Generales Aéreos	Peru	
Tristar Air	Egypt	
Turks Air Cargo	US	
Tyrolean Airways	Austria	Austrian Airlines
US Airways	US	American Airlines
UTair-Express	Russia	
Veteran Avia	Armenia	
Virgin Australia (NZ)	New Zealand	
Vista Georgia	Georgia	
Volare Airlines	Italy	
Wizz Air Ukraine	Ukraine	





Operator	IATA	ICAO	Model and Count
LATAM Airlines Chile	LAN	LA	A320-200 (27), A321-200 (12), 767-300ER (12), 787-8 (10), 787-9 (12)
LATAM Cargo Chile	LCO	UC	767-300ERF (2), 777-200F (3)
LATAM Express	LXP	LU	A319-100 (7)
One Airlines	ONS		737-300 (1)
Sky Airline (Chile)	SKU	H2	A319-100 (13), A320-200 (2)
China			
9 Air	JYH	AQ	737-800 (8)
Air China	CCA	CA	A319-100 (33), A320-200 (43), A321-200 (54), A330-200 (30), A330-300 (23), 737-700 (21), 737-800 (120), 747-400 (4), 747-8 (7), 777-200 (8), 777-300ER (20), 787-9 (4)
Air China Cargo	CAO		747-400BCF (1), 747-400FSCD (3), 757-200PCF (4), 777-200F (8)
Air Guilin	CGH	GT	A319-100 (2)
Apex Air (China)			Challenger 850 (1)
Asia United Business Aviation			ACJ319-100 (1)
AVIC Cargo Airlines			757-200 (2)
Beijing Airlines	BJN		ACJ318-100 (1), ACJ319-100 (1), 737-700 BBJ (1)
Capital Airlines (China)	CBJ	JD	A319-100 (21), A320-200 (33), A321-200 (10), A330-200 (3)
Chang'an Airlines	CGN	9H	737-800 (4)
Chengdu Airlines	UEA	EU	A319-100 (3), A320-200 (19), ARJ21-700 (1)
China Cargo Airlines	CKK	CK	747-400ERF (2), 747-400FSCD (2), 777-200F (6)
China Civil Aviation Flying College			MA-600 (2)
China Eastern Airlines	CES	MU	A319-100 (37), A320-200 (163), A321-200 (57), A330-200 (30), A330-300 (15), 737-700 (45), 737-800 (73), 777-300ER (14)
China Eastern Business Aviation Services			ACJ318-100 (1), Legacy 650 (4)
China Express Airlines	HXA	G5	CRJ900ER (25)
China Flight Test Establishment			Tu-204-100 (1)
China Free Sky Aviation			Challenger 850 (3)
China Meteorological Administration			MA-60(MPA) (1)
China Postal Airlines	CVZ	CF	737-300F (12), 737-300QC (2), 737-400F (8), 757-200 (1), 757-200PCF (1)
China Southern Airlines	CSN	CZ	A319-100 (37), A320-200 (122), A321-200 (83), A330-200 (16), A330-300 (21), A380-800 (5), 737-300 (3), 737-700 (26), 737-800 (99), 747-400FSCD (2), 757-200 (10), 777-200 (4), 777-200F (12), 777-300ER (10), 787-8 (10), E190-100LR (20), Lineage 1000 (1)
China United Airlines	CUA	KN	A319-100 (3), 737-700 (8), 737-800 (25)
China Xinhua Airlines	CXH	XW	737-800 (5)
Chongqing Airlines	CON	OQ	A319-100 (4), A320-200 (9)
CMS China Maritime Service			CRJ200LR (2)
Colorful Guizhou Airlines	CGZ	GY	E190-100LR (3)

Operator	IATA	ICAO	Model and Count
Dalian Airlines	CCD		737-800 (10)
Deer Jet Shanghai	BDJ	DF	ACJ319-100 (1), ACJ320-200 (1), 737-700 BBJ (2), 737-700 BBJ (1)
Dehong South Asia General Airlines			737-700 BBJ (1)
Donghai Airlines	EPA	DZ	737-800 (11)
Donghui Group			Legacy 650 (1)
Fuzhou Airlines	FZA	FU	737-800 (8)
Grand China Air	GDC	CN	737-800 (3)
Guizhou Airlines	CGH	G4	737-700 (1), 737-800 (14)
GX Airlines	CBG	GX	E190-100AR (3), E190-100LR (7)
Hainan Airlines	CHH	HU	A330-200 (8), A330-300 (14), 737-700 (6), 737-800 (114), 767-300ER (3), 787-8 (10), 787-9 (3)
Hebei Airlines	HBH	NS	737-700 (2), 737-800 (8), E190-100LR (6)
Hongtu Airlines	HTU	A6	A321-200 (2)
Jiangsu Airlines			CRJ200LR (5)
Jiangxi Airlines	CJX	RY	737-800 (2)
JoyAir	JOY	JR	MA-60 (8)
Juneyao Airlines	DKH	HO	A320-200 (41), A321-200 (15)
Kunming Airlines	KNA	KY	737-700 (8), 737-800 (10)
Longjiang Airlines	SNG		A321-200 (1)
Loong Air	CDC	GJ	A320-200 (17)
Lucky Air (China)	LKE	8L	A319-100 (3), A320-200 (5), 737-700 (11), 737-800 (13)
Man Sang International General Aviation	MSF		Legacy 650 (3), Lineage 1000 (2)
Nanshan Group			737-700 BBJ (1)
Ningxia Cargo Airlines	HTK	HT	737-300F (3)
Okay Airways	OKA	BK	737-300F (1), 737-800 (16), 737-900ER (3), MA-60 (13)
People's Liberation Army Air Force			737-300 (8), 737-700 (2), 737-800 (4), CRJ200LR (5), CRJ701ER (5), CRJ702ER (7), MA-60(MPA) (6), Tu-154M (7)





Operator	IATA	ICAO	Model and Count
Qingdao Airlines	QDA	QW	A320-200 (9)
Reignwood Star Aviation			DHC-6-400 (1)
Ruili Airlines	RLH	DR	737-700 (6), 737-800 (3)
SF Airlines	CSS	O3	737-300F (12), 737-400F (3), 767-300ER (1), 767-300ERBCF (3)
Shan Xi Airlines	CXI		737-800 (1)
Shandong Airlines	CDG	SC	737-700 (3), 737-800 (92), CRJ701ER (2)
Shanghai Airlines	CSH	FM	A330-200 (3), A330-300 (3), 737-700 (10), 737-800 (63), 767-300 (4), 767-300ER (2)
Shantou Airlines			737-800 (14)
Shenzhen Airlines	CSZ	ZH	A319-100 (5), A320-200 (76), 737-700 (3), 737-800 (78), 737-900 (5)
Sichuan Airlines	CSC	3U	A319-100 (20), A320-200 (48), A321-200 (30), A330-200 (4), A330-300 (4), ACJ319-100 (3)
Sichuan Tri-Star General Aviation			MA-60 (2)
Spring Airlines	CQH	9C	A320-200 (62)
SR Jet			CRJ200LR (7), Legacy 650 (1)
Tianjin Airlines	GCR	GS	A320-200 (23), A330-200 (1), E190-100AR (27), E190-100LR (13), E190-200LR (4), ERJ 145LI (20)
Tibet Airlines	TBA	TV	A319-100 (14), A320-200 (3), A330-200 (1)
Uni-Top Airlines	UTP	UW	A300-600R (5), A300-600RF (2), 747-200FSCD (1), 747-200BSF (2), 747-400FSCD (1)
Urumqi Air	CUH	UQ	737-800 (7)
West Air (China)	CHB	PN	A319-100 (4), A320-200 (21)
Xiamen Airlines	CXA	MF	737-700 (17), 737-800 (117), 757-200 (4), 787-8 (6)
Yangtze River Express	YZR	Y8	737-300F (14), 737-300QC (2), 737-400F (3), 737-800 (2), 747-400BDSF (3)



Operator	IATA	ICAO	Model and Count
YTO Express Airlines	HYT	YG	737-300 (1), 737-300F (4)
Yunnan Ying'An Airlines	AYE	YI	MA-60 (1)
Zhuhai Airlines			737-700 (2), 737-800 (7)
ZYB Lily Jet	MZT		Challenger 800 (1), Challenger 850 (3)

Colombia			
ADA - Aerolínea de Antioquia	ANQ		Do328-100 (5)
AerCaribe	ACL		737-400SF (2)
AeroSucre	KRE	GO	727-200F (2), 737-200F (1)
Armada Nacional de Colombia			ATR 42-300 (1)
Avianca	AVA	AV	A318-100 (10), A319-100 (14), A320-200 (39), A321-200 (5), A330-200 (8), ATR 72-600 (9), 787-8 (7)
Copa Airlines Colombia	RPB	P5	737-700 (4), E190-100AR (3), E190-100LR (8)
Easyfly (Colombia)	EFY	VE	ATR 42-500 (4), Jetstream 41 (15)
Fuerza Aérea Colombiana			727-100C (1), 727-200F (1), 737-400C (2), 737-700 BBJ (1), 767-200ERM (1), Legacy 600 (1), F28-1000 (1), F28-3000 (1)
LATAM Airlines Colombia	ARE	4C	A319-100 (4), A320-200 (17), 767-300ER (1)
LATAM Cargo Colombia	LAE	L7	767-300ERF (1)
Líneas Aéreas Suramericanas	LAU		727-100F (2), 727-200F (5)
Policía Nacional Colombiana			ATR 42-300 (3), DHC-6-300 (2), Dash 8-300 (1)
SARPA - Servicios Aéreos Panamericanos			EMB 120RT (2)
SATENA - Servicio Aéreo a Territorios Nacionales	NSE	9R	ATR 42-500 (4), ATR 42-600 (3), E170-100LR (1), ERJ 145LR (1)
SELVA - Servicios Aéreos del Vaupes	SDV		727-200F (1)
TAMPA Cargo	TPA	QT	A330-200F (5)
VivaColombia	VVC	FC	A320-200 (10)

Congo (Republic of)			
Air Congo			MA-60 (4)
Canadian Airways Congo			737-200 (1), 737-500 (1), MD-82 (1)
Trans Air Congo - TAC	TSG	Q8	737-200 (3), 737-300 (3)

Congo (Democratic Republic of)			
Aviatrade Congo			737-200C (1)
BlueSky Airlines (Congo Kinshasa)			MD-83 (2)
Congo Airways	CGA		A320-200 (2), Dash 8-Q400 (2)
Congo Presidential Flight			707-100B (1)
flyCAA	ALX	BU	A321-200 (1), Fokker 50 (3)
Force Aérienne du Congo			727-100 (1), 727-100C (2), DC-8-50F (1)
Gomair			727-100C (1), 737-200 (1), 737-300QC (2)
ITAB - Int'l Trans Air Business			737-200C (1)
Katanga Wings			MD-83 (1)
Services Air			727-200F (4)
Trans Air Cargo Service			727-100C (1), DC-8-62F (1), DC-8-73F (1)

Cook Islands			
Air Rarotonga	RAR	GZ	Saab 340AQC (1)
Costa Rica			
Air Costa Rica			737-300QC (1)



Operator	IATA	ICAO	Model and Count
Aviones Taxi Aéreo			DHC-6-200 (1)
LACSA Costa Rica	LRC	LR	E190-100IGW (2)
Nature Air	NRR	5C	DHC-6-300 (2)
Croatia			
Croatia Airlines	CTN	OU	A319-100 (4), A320-200 (2), Dash 8-Q400 (6)
European Coastal Airlines	ECB	WL	DHC-6-100 (1), DHC-6-300 (5)
Limitless Airways	LIM		A320-200 (1)
Trade Air	TDR	C3	A320-200 (1), Fokker 100 (2)
Cuba			
Aerogaviota	GTV		ATR 42-500 (4)
Cubana	CUB	CU	An-158-200 (6), ATR 42-300 (1), ATR 72-200 (3), Il-96-300 (4), Tu-204-100 (1), Tu-204-100(E) (2)
Curacao			
Insel Air	INC	7I	Fokker 50 (7), MD-82 (3), MD-83 (1)
Cyprus			
Cobalt	FCB	CO	A320-200 (1)
Oger Aviation			737-700 BBJ (1), 737-800 BBJ (1)
Tus Airways	CYF	U8	Saab 2000 (1), Saab 340B (1)
Czech Republic			
ABS Jets	ABP		Legacy 600 (5), Legacy 650 (2)
CSA Czech Airlines	CSA	OK	A319-100 (9), A330-300 (1), ATR 42-500 (3), ATR 72-500 (4)
Czech Air Force	CEF		ACJ319-100 (2)
Travel Service Airlines	TVS	QS	737-700 (2), 737-800 (25), 737-900ER (2)
Denmark			
Air Alsie	MMD	6I	ATR 72-500 (2)
BackBone Aviation	BOB		CRJ200ER (1), CRJ200LR (1)
Cimber	CIM	QA	CRJ900ER (12)
DAT - Danish Air Transport	DTR	DX	A320-200 (4), ATR 42-300 (1), ATR 42-300QC (1), ATR 72-200 (5), MD-83 (1)
ExecuJet Scandinavia	VMP		Challenger 850 (3)
Jet Time	JTG	JO	ATR 72-500 (3), ATR 72-600 (8), 737-300 (5), 737-300QC (1), 737-400F (5), 737-700 (4)
Primera Air Scandinavia	PRI	PF	737-800 (2)
Star Air (Denmark)	SRR	S6	767-200ERF (5), 767-200PC (6)
Sun-Air	SUS	EZ	Do328-300 (15)
Thomas Cook Airlines Scandinavia	VKG	DK	A321-200 (8), A330-200 (1), A330-300 (3)
Djibouti			
Force Aérienne du Djibouti			MA-60 (1)
Dominican Republic			
Air Century			Saab 340B (2)
Dominican Wings	DWI		A320-200 (1)
PAWA Dominicana	PWD	7N	DC-9-30 (1), MD-82 (1), MD-83 (4), MD-87 (1)
SAP - Servicios Aéreos Profesionales	PSV	5S	DHC-6-100 (1)
Transcarga Dominicana			A300B4F (1)

Operator	IATA	ICAO	Model and Count
Ecuador			
AeroGal	GLG	2K	A319-100 (6), A320-200 (4)
Fuerza Aérea Ecuatoriana	FAE		727-100 (1), 727-200 (1), 737-200 (1), DHC-6-300 (3), Legacy 600 (1)
LAC - Línea Aérea Cuencana			737-500 (1)
LATAM Airlines Ecuador	LNE	XL	A319-100 (6), 767-300ER (3)
Petroecuador			ERJ 145LR (1)
TAME Ecuador	TAE	EQ	A319-100 (4), A320-200 (5), A330-200 (1), ATR 42-500 (3), E190-100AR (2), E190-100LR (1)
Trans Am Aero Express del Ecuador	RTM	7T	ATR 42-300F (1)
Egypt			
Air Arabia Egypt	RBG	E5	A320-200 (1)
Air Cairo	MSC	SM	A320-200 (6)
Air Leisure	ALD	AL	A340-200 (3), MD-83 (1)
Alexandria Airlines	KHH	XH	737-500 (1)
AlMasria Universal Airlines	LMU	UJ	A320-200 (2), A321-200 (2)
AMC Airlines	AMV		737-800 (1)
Aviator	AVV	T9	737-500 (1)
Cairo Aviation	CCE	OE	Tu-204-100 (3)
EgyptAir	MSR	MS	A320-200 (12), A321-200 (4), A330-200 (7), A330-300 (4), 737-800 (20), 777-200ER (2), 777-300ER (6)
EgyptAir Cargo	MSX		A300-600RF (2)
EgyptAir Express	MSE		E170-100LR (12)
Egyptian Air Force			A340-200 (1)
FlyEgypt	FEG	FT	737-800 (2)
Nesma Airlines	NMA	NE	A319-100 (1), A320-200 (3)
Nile Air	NIA	NP	A320-200 (5), A321-200 (1)
Petroleum Air Services	PER	PS	CRJ900ER (2), Dash 7-100 (1), Dash 8-Q300 (5)
Prime Air			727-100RE (1)
El Salvador			
TACA International Airlines	TAI	TA	A319-100 (8), A320-200 (18), A321-200 (6), A330-200 (1), E190-100IGW (8)
VECA Airlines	VAR	VU	A319-100 (2)
Equatorial Guinea			
Air Annobón			RJ85 (1)
CEIBA Intercontinental	CEL	C2	ATR 42-300F (1), ATR 42-500 (1), ATR 72-500 (2), 737-800 (2), 777-200LR (1)
Cronos Airlines	CRA	C8	BAe 146-200 (1)
GEASA - Guinea Ecuatorial Airlines	GEA		767-300ER (1)
Punto Azul			ERJ 145MP (1)
Republica de Guinea Ecuatorial			737-700 BBJ (1), ERJ 145EP (1)
Eritrea			
Eritrean Airlines	ERT	B8	767-200ER (1)
Massawa Airways			MA-60 (1)





Operator	IATA	ICAO	Model and Count
Estonia			
Airest	AEG		Saab 340A (1), Saab 340AF (7)
Regional Jet	EST	EE	CRJ701ER (2)
SmartLynx Airlines Estonia	MYX		A320-200 (2)
Ethiopia			
Ethiopian Air Force			DHC-6-300 (4)
Ethiopian Airlines	ETH	ET	A350-900 (1), 737-700 (4), 737-800 (15), 757-200 (1), 757-200PF (2), 767-300ER (7), 777-200F (6), 777-200LR (6), 777-300ER (4), 787-8 (15), Dash 8-Q400 (12)
National Airways (Ethiopia)		9Y	Fokker 50 (2)
Trans Nation Airways	TNW		Dash 8-Q200 (2)
Falkland Islands			
British Antarctic Survey	BAN		DHC-6-300 (4), Dash 7-100 (1)
Faroe Islands			
Atlantic Airways	FLI	RC	A319-100 (3)
Fiji			
Air Kaibu			DHC-6-300 (1)
Fiji Airways	FJI	FJ	A320-200 (3), A330-300 (1), 737-700 (1), 737-800 (4)
Fiji Link	FJA	PI	ATR 42-600 (1), ATR 72-600 (2), DHC-6-300 (3)
Kokomo Resort Fiji			DHC-6-400 (1)
Finland			
Finnair	FIN	AY	A319-100 (9), A320-200 (10), A321-200 (11), A330-300 (8), A340-300 (2), A350-900 (6)
Jet Time Finland	JTF		737-700 (1)
NoRRA Nordic Regional Airlines	WBA	N7	ATR 72-500 (11), E190-100LR (12)
France			
Aigle Azur	AAF	ZI	A319-100 (3), A320-200 (7)
Air Caraïbes Atlantique	CAJ		A330-200 (1), A330-300 (4), A350-900 (1)
Air Corsica	CCM	XK	A320-200 (5), ATR 72-500 (5)
Air France	AFR	AF	A318-100 (18), A319-100 (36), A320-200 (44), A321-100 (5), A321-200 (15), A330-200 (15), A340-300 (12), A380-800 (10), ACJ319-100 (2), 777-200ER (25), 777-200F (2), 777-300ER (43)

Operator	IATA	ICAO	Model and Count
Airbus Transport International	BGA	4Y	A300-600ST (5)
Armée de l'Air	CTM		A310-300 (3), A330-200 (1), A340-200 (2), 707-300(E-3F) (4), DHC-6-300 (6)
ASL Airlines France	FPO	50	737-300F (2), 737-300QC (5), 737-400F (4), 737-700 (4)
Avdef			Jetstream 41 (2)
Baulip Sports			DHC-6-200 (1)
Centre d'Essais en Vol			Fokker 100 (1)
Corsair International	CRL	SS	A330-200 (2), A330-300 (2), 747-400 (3)
ENAC	NAK		ATR 42-300 (1)
French Blue	FBU	BF	A330-300 (1)
HOP!		HOP	ATR 42-500 (12), ATR 72-500 (6), ATR 72-600 (5), CRJ1000ER (14), CRJ701 (13), E170-100LR (5), E170-100STD (10), E190-100LR (6), E190-100STD (4), ERJ 145EP (10), ERJ 145MP (6)
La Compagnie	DJT	B0	757-200 (2)
Novespace/CNES			A310-300 (1)
OpenSkies	BOS	EC	757-200 (3), 767-300ER (1)
Pan Européenne Air Service	PEA		ERJ 135LR (1), ERJ 145LR (1)
SAFIRE			ATR 42-300 (1)
Securité Civile	FRU		Dash 8-Q400(MRT) (2)
Transavia France	TVF	TO	737-800 (26)
XL Airways France	XLF	SE	A330-200 (2), A330-300 (1), 737-800 (1)
French Polynesia			
Air Archipels			DHC-6-300 (3)
Air Tahiti	VTA	VT	ATR 42-600 (2), ATR 72-500 (5), ATR 72-600 (3)
Air Tahiti Nui	THT	TN	A340-300 (5)
Mana Otter			DHC-6-400 (1)
Gabon			
Afric Aviation	EKG	L8	ATR 42-300 (1)
Air Affaires Gabon	NVS		Dash 8-Q300 (1)
Force Aérienne Gabonaise			ATR 42-300 (1), 777-200 (1)
Nationale Regionale Transport	NRG		EMB 120RT (1)
Gambia			
Jupiter Airlines	JUA		CRJ100ER (1)
Mahfooz Aviation (Gambia)	MZS	M2	727-200 (1)
Mid Africa Aviation	MFG	8G	737-300 (1), 737-400F (1), 737-500 (2), Do328-300 (1), Legacy 600 (1)
Republic of Gambia			727-100 (1), 727-100RE (1), II-62M (1)
Georgia			
Bravo Air (Georgia)			737-300 (1)
Georgian Airways	TGZ	A9	737-700 (2), Challenger 850 (1), CRJ100ER (1), CRJ200LR (1), E170-100LR (1)
TCA - The Cargo Airlines	TZS		A300B4F (2), A300F4 (2), 747-200FSCD (1), 747-200BSF (1)
Germany			
ACM Air Charter	BVR		737-800 BBJ (2)
Aero-Dienst	ADN		Do328-300 (2)
AeroLogic	BOX	3S	777-200F (8)





Operator	IATA	ICAO	Model and Count
airberlin	BER	AB	A319-100 (4), A320-200 (44), A321-200 (22), A330-200 (16), 737-800 (3)
Air Hamburg	AHO	HH	Legacy 600 (1), Legacy 650 (6)
Air X Charter (Germany)			Challenger 850 (1)
Avanti Air	ATV		Fokker 100 (2)
Baden Aircraft Operations	FBR		Legacy 600 (1)
Businesswings	JMP		DHC-6-300 (1)
Condor	CFG	DE	A320-200 (9), A321-200 (7), 757-300 (13), 767-300ER (16)
DC Aviation	DCS		ACJ319-100 (2), Do328-300 (1), Legacy 600 (1)
DLR Flugbetriebe	LFO		A320-200 (1)
EAT Leipzig	BCS	QY	A300-600F (1), A300-600RF (20), A330-300 (1), 757-200PCF (5), 757-200SF (6)
Eurowings	EWG	EW	A320-200 (15), CRJ900ER (10)
FlairJet (Germany)			CRJ200ER (1)
Germania	GMI	ST	A319-100 (8), A321-200 (4), 737-700 (10)
germanwings	GWJ	4U	A319-100 (43), A320-200 (18)
K5-Aviation (Germany)	KAY		ACJ319-100 (3)
LGW - Luftfahrtgesellschaft Walter	LGW	HE	Dash 8-Q400 (17)
Lufthansa	DLH	LH	A319-100 (30), A320-200 (59), A320neo (3), A321-100 (20), A321-200 (44), A330-300 (19), A340-300 (10), A340-600 (24), A380-800 (14), 737-300 (7), 747-400 (13), 747-8 (19)
Lufthansa Cargo	GEC		777-200F (5), MD-11F (12)
Lufthansa CityLine	CLH	CL	A340-300 (8), CRJ900ER (25), E190-100LR (9), E190-200LR (14)
Luftwaffe	GAF		A310-300 (1), A310-300MRTT (4), A340-300 (2), ACJ319-100 (2)
MHS Aviation (Germany)	MHV	M2	Do328-100 (6)
NATO			707-300(E-3A) (16)
PrivatAir (Germany)	PTG		A319-100 (3), 737-700 BBJ (1), Lineage 1000 (1)
Private Wings	PWF	8W	Do328-100 (8), Do328-300 (2)
Small Planet Airlines Germany	LLX		A320-200 (2)
Stuttgarter Flugdienst			Legacy 600 (1)
Sun Express Deutschland	SXD	XG	A330-200 (6), 737-800 (15)
TUIfly (Germany)	TUI	X3	737-700 (5), 737-800 (35)
VW Air Services	WGT		ACJ319-100 (1)
WDL Aviation	WDL	W1	BAe 146-200 (2), BAe 146-300 (3)
Ghana			
Africa World Airlines	AFW	AW	ERJ 145LI (3)
Air Ghana	GHN		737-400F (1)
Airlift International	ALE		DC-8-63CF (1), DC-8-63F (1)
Ghana Air Force			F28-3000 (1)
Starbow Airlines	IKM	S9	BAe 146-300 (1)
Greece			
Aegean Airlines	AEE	A3	A319-100 (1), A320-200 (38), A321-200 (8)
Amjet Executive	AMJ		MD-83 (1)
Astra Airlines	AZI	A2	A320-200 (1), ATR 42-300 (2), ATR 72-200 (1), BAe 146-300 (1)
Blue Bird Airways	BBG	BZ	737-300 (1)
CCC Consolidated Contractors			CRJ701 (1)

Operator	IATA	ICAO	Model and Count
Ellinair	ELB	EL	A319-100 (2), RJ85 (2), 737-300 (1)
GainJet Aviation	GNJ		737-300 (1), 737-400 (1), 757-200 (1), Legacy 600 (1), MD-87 (1)
Hellenic Air Force			Legacy 600 (1), ERJ 135LR (1), ERJ 145SA (4)
Minoan Air	MAV		Fokker 50 (4)
Olympic Air	OAL	OA	ATR 42-600 (2), Dash 8-100 (4), Dash 8-Q400 (10)
Olympus Airways	OLY		A319-100 (2), A321-100 (2), A321-200 (1)
orange2fly	OTF		A320-200 (1)
Sky Express (Greece)	SEH	GQ	ATR 42-300 (2), ATR 42-500 (1), Jetstream 41 (3)
Greenland			
Air Greenland	GRL	GL	A330-200 (1), Dash 8-200 (1), Dash 8-Q200 (6)
Guadeloupe			
Air Antilles Express	GUY	3S	ATR 42-500 (3), ATR 42-600 (1), DHC-6-300 (2)
Air Caraïbes	FWI	TX	ATR 72-500 (3)
Guam			
Asia Pacific Airlines (Guam)	MGE	P9	727-200F (3), 757-200 (1), 757-200PCF (1)
Skydive Guam			Saab 340AQC (1), Saab 340B (1)
Guatemala			
ARM Aviación			DHC-6-300 (1)
Aviateca Guatemala	GUG	GU	ATR 72-600 (4)
DHL de Guatemala	JOS	L3	ATR 42-300F (1)
TAG - Transportes Aéreos Guatemaltecos	TGU	5U	Saab 340A (4)
Guernsey			
Aurigny Air Services	AUR	GR	ATR 42-500 (1), ATR 72-200 (1), ATR 72-500 (2), E190-200STD (1)
YH Aviation			Legacy 600 (1)
Honduras			
Aerolineas Sosa	NSO	P4	CRJ100ER (1), Saab 340B (1)
EasySky	EKY		737-200 (1)
Fuerza Aérea Hondureña			Legacy 600 (1)
Isleña Airlines	ISV	WC	ATR 72-600 (2)
Hong Kong			
Air Hong Kong	AHK	LD	A300-600F (8), A300-600RF (2), 747-400BCF (3)
BAA Jet Management			ACJ318-100 (2), Challenger 850 (3), Legacy 650 (2), Lineage 1000 (1)
Cathay Pacific	CPA	CX	A330-300 (42), A340-300 (5), A350-900 (2), 747-400 (3), 747-400BCF (1), 747-400ERF (6), 747-400FSCD (1), 747-8F (14), 777-200 (5), 777-300 (12), 777-300ER (53)
Dragonair	HDA	KA	A320-200 (15), A321-200 (8), A330-300 (19)
GFS - Government Flying Service	HKG		Jetstream 41(MPA) (2)
HK Express	HKE	UO	A320-200 (15)
Hong Kong Airlines	CRK	HX	A320-200 (11), A330-200 (9), A330-200F (5), A330-300 (7)
Hong Kong Jet			A330-200 (1), ACJ318-100 (1), ACJ319-100 (2), 787-8 (1)
Meridian Pacific Aviation			Challenger 800 (1)
Metrojet (Hong Kong)	MTJ		737-700 BBJ (1), Legacy 650 (1)
Silver Wings International			Challenger 850 (1)



Operator	IATA	ICAO	Model and Count
Sino Jet Management	JBE		737-700 BBJ (1), Legacy 650 (3)
TAG Aviation Asia	TBJ		ACJ319-100 (1), Challenger 850 (3), Legacy 650 (1)
Yuxiu Property			737-700 BBJ (1)
Hungary			
ASL Airlines Hungary	FAH		737-400F (5)
Budapest Aircraft Services	BPS		EMB 120ER (3)
Fleet Air International	FRF		Saab 340AF (3), Saab 340AQC (1)
Travel Service Hungary	TVL	70	737-800 (1)
Wizz Air	WZZ	W6	A320-200 (63), A321-200 (8)
Iceland			
Air Atlanta Icelandic	ABD	CC	A330-200 (1), A340-300 (1), 747-400 (8), 747-400BCF (2), 747-400BDSF (4), 747-400FSCD (2)
Air Iceland	FXI	NY	Dash 8-Q200 (2), Dash 8-Q400 (3), Fokker 50 (3)
Bluebird Cargo	BBD	BF	737-300F (4), 737-400F (2)
Icelandair	ICE	FI	757-200 (25), 757-200PCF (1), 757-200PF (1), 757-300 (1), 767-300ER (2)
Landhelgisgæslan	ICG		Dash 8-Q300 (1)
Norlandair	FNA		DHC-6-300 (3)
WOW air	WOW	WW	A320-200 (2), A321-200 (6), A330-300 (1)
India			
Air Carnival		2S	ATR 72-500 (1)
Air Costa	LEP	LB	E190-100AR (2), E190-100STD (2)
Air India	AIC	AI	A319-100 (22), A320-200 (24), A321-200 (20), 747-400 (5), 777-200LR (3), 777-300ER (12), 787-8 (21)
Air India Express	AXB	IX	737-800 (20)
Air One Aviation			Lineage 1000 (1)
Air Pegasus	PPL	OP	ATR 72-500 (3)
Air Works India Aircraft Charter			DHC-6-300 (1)
AirAsia India	IAD	I5	A320-200 (6)
Airmid Aviation Services			Challenger 850 (1)
Alliance Air (India)	LLR	9I	ATR 42-300 (2), ATR 72-600 (8), CRJ701ER (3)
Blue Dart Aviation	BDA	BZ	757-200PCF (6)
Border Security Force			Legacy 600 (1)
Club One Air			CRJ100ER (1)
Essar Group			737-700 BBJ (1)
GoAir	GOW	G8	A320-200 (19), A320neo (2)
India Fly Safe Aviation			ERJ 135LR (1)
Indian Air Force			737-200 (4), 737-700 BBJ (3), Legacy 600 (4), ERJ 145SM (3)
Indian Navy			737-800ER (8)
IndiGo Airlines	IGO	6E	A320-200 (106), A320neo (6)
Jet Airways	JAI	9W	A330-200 (4), A330-300 (4), ATR 72-500 (15), ATR 72-600 (3), 737-700 (2), 737-800 (60), 737-900 (2), 737-900ER (4), 777-300ER (5)
JetLite	JLL		737-700 (3), 737-800 (5)
Kalyan Jewellers			Legacy 650 (1)
Karnavati Aviation			Legacy 650 (1)
Krishnapatnam Port Company			Legacy 600 (1)



Operator	IATA	ICAO	Model and Count
Quikjet Airlines	FQA	DQ	737-400SF (1)
Reliance Industries			ACJ319-100 (1), Legacy 650 (1), ERJ 135ER (1)
Siva Air			737-700 BBJ (1)
SpiceJet	SEJ	SG	737-700 (2), 737-800 (20), 737-900ER (4), Dash 8-Q400 (14)
TruJet	TRJ	2T	ATR 72-500 (3)
Vistara	VTI	UK	A320-200 (11)
Indonesia			
Air Born			DHC-6-300 (2)
Airfast Indonesia	AFE		DHC-6-300 (3), DHC-6-400 (4), Legacy 600 (1), MD-82 (2), MD-83 (2)
Asialink Cargo Express	AKC	KP	Fokker 50F (1)
Aviastar Mandiri	VIT		BAe 146-200 (3), DHC-6-300 (5)
Batik Air	BTk	ID	A320-200 (22), 737-800 (11), 737-900ER (6)
Cardigair	CAD	8F	737-300F (3)
Citilink	CTV	QG	A320-200 (39), 737-300 (1), 737-500 (3)
Deraya Air Taxi	DRY		BAe ATPF (2)
Dimonim Air			DHC-6-300 (2), DHC-6-400 (1)
Enggang Air Service			Legacy 600 (1)
Garuda Indonesia	GIA	GA	A330-200 (8), A330-300 (16), ATR 72-600 (14), 737-800 (79), 747-400 (2), 777-300ER (10), CRJ1000ER (18)
Gatari Air Service	GHS		ATR 42-500 (2)
Indonesia Air Transport - IAT	IDA		ATR 42-300QC (1), ATR 42-500 (2), Legacy 600 (1), Fokker 50 (1)
Indonesia AirAsia	AWQ	QZ	A320-200 (17)
Indonesia AirAsia X	IDX	XT	A320-200 (5), A330-300 (2)
Indonesian Police			Fokker 50 (1)
Jayawijaya Dirgantara	JWD		737-200 (1), 737-200C (2)
Jhonlin Air Transport	JLB		ATR 4 2-600 (1)
KalStar	KLS	KD	ATR 42-300 (3), ATR 42-500 (1), ATR 72-500 (2), ATR 72-600 (3), 737-300 (1), 737-500 (1), E190-100LR (1), E190-200LR (2)
Lion Air	LNI	JT	A330-300 (3), 737-800 (37), 737-900ER (71), 747-400 (2)
Manunggal Air	MNS		BAe 146-100 (1)
My Indo Airlines	MYU	2Y	737-300F (2)
NAM Air	NIH	IN	737-300 (1), 737-500 (5)



Operator	IATA	ICAO	Model and Count
Nusantara Air Charter			RJ100 (1), ATR 42-500 (1), ATR 72-500 (1), BAe 146-200 (1)
Pelita Air	PAS	6D	RJ85 (1), ATR 42-500 (1), ATR 72-500 (2), Dash 7-100 (3), Fokker 100 (2)
Premiair (Indonesia)			737-700 BBJ (1), Legacy 600 (1), Legacy 650 (2), Lineage 1000 (1), ERJ 135LR (1)
Spirit Avia Sentosa			DHC-6-300 (3)
Sriwijaya Air	SJY	SJ	737-300 (9), 737-500 (12), 737-800 (16), 737-900 (2)
TNI-AU Tentara Nasional Indonesia-Angkatan Udara			737-200 (4), 737-400 (2), 737-500 (1), 737-800 BBJ (1), F28-1000 (1), F28-3000 (2), F28-4000 (1)
TransNusa	TNU	8B	ATR 72-600 (2), BAe 146-100 (1), Fokker 50 (3), Fokker 70 (1)
Transwisata Air	TWT		Fokker 100 (1)
Travira Air			ATR 42-600 (1), 737-500 (1), 737-800 (1), Dash 8-Q300 (2)
Trigana Air Service	TGN	IL	ATR 42-300 (5), ATR 42-300QC (1), ATR 72-200 (3), 737-200 (2), 737-300 (1), 737-300F (4), 737-400 (1), DHC-6-300 (3)
Tri-M.G. Intra Asia Airlines	TMG	GM	737-300F (4)
Wings Air (Indonesia)	WON	IW	ATR 72-500 (20), ATR 72-600 (30)
xpressair	XAR	XN	737-300 (4), Do328-100 (6)
Iran			
ATA Airlines (Iran)	TBZ	I3	A320-200 (3), 737-300 (1), MD-83 (6)
Atrak Air	ATR		A320-200 (3)
AWA Airways			737-300 (1)
Caspian Airlines	CPN	IV	737-400 (3), 747-100FSCD (1), 747-200F (1), MD-82 (1), MD-83 (4)
Iran Air	IRA	IR	A300-600R (4), A300B2 (1), A300B4 (4), A300B4F (2), A310-300 (2), A320-200 (5), 747-200CM (1), 747SP (1), Fokker 100 (14)
Iran Airtour Airline	IRB	B9	MD-82 (4), MD-83 (1)
Iran Aseman Airlines	IRC	EP	A320-200 (3), A340-300 (1), ATR 72-200 (4), ATR 72-500 (2), 727-200 (3), 727-200F (1), 737-400 (2), Fokker 100 (18)
Islamic Republic of Iran Air Force			707-300C (9), 747-100FSCD (4), 747-100SF (1), 747-200CM (1)
Kish Air	KIS	Y9	Fokker 100 (3), MD-82 (4), MD-83 (4)
Mahan Air	IRM	W5	A300-600 (10), A300-600R (4), A300B2 (1), A300B4 (1), A310-300 (10), A340-300 (4), A340-600 (7), RJ100 (4), RJ85 (4), 747-300 (1), 747-300M (1), BAe 146-200 (1), BAe 146-300 (8)
Meraj Air	MRJ	JL	A300-600R (2), A320-200 (3), A321-200 (1), A340-300 (1), 707-300C (2), 737-200 (1)
Naft Airlines	IRG	NV	Fokker 100 (4), Fokker 50 (6)

Operator	IATA	ICAO	Model and Count
Nasim Air			737-400 (1)
Qeshm Airlines	QSM	QB	A300-600R (5), A320-200 (3), RJ100 (4), RJ85 (1), Fokker 100 (4), Fokker 50 (4)
Sepehran Airlines			Do328-300 (1)
Taban Air	TBN	HH	A310-300 (1), RJ85 (1), 737-400 (1), 757-200 (1), MD-88 (5)
Taftan Air Lines	SBT		Fokker 50 (2), MD-82 (1)
Tehran Airlines			A310-300 (1)
Zagros Airlines (Iran)	IZG	ZV	A320-200 (8), MD-82 (5), MD-83 (3)
Iraq			
Al-Naser Airlines	MHK	NR	737-400 (1)
Fly Baghdad	FBA	IF	CRJ200ER (3)
Iraq Gate	IGC		CRJ200ER (1)
Iraqi Airways	IAW	IA	A320-200 (3), A321-200 (2), A330-200 (1), 737-700 (2), 737-800 (12), 747-400 (2), 767-300ER (2), 777-200LR (1), CRJ900ER (6)
ZagrosJet	GZQ	Z4	A321-200 (1)
Ireland			
Aer Lingus	EIN	EI	A320-200 (34), A321-200 (3), A330-200 (4), A330-300 (4)
ASL Airlines Ireland	ABR		A300-600RF (4), ATR 42-300F (7), ATR 72-200F (14), ATR 72-500F (1), 737-300 (1), 737-400 (1), 757-200 (4), 757-200SF (1)
CityJet	BCY	WX	RJ85 (17), CRJ900ER (8), SSJ 100B (2)
Norwegian Air International	IBK	D8	737-800 (40)
Ryanair	RVR	FR	737-700 (1), 737-800 (353)
Stobart Air	STK	RE	ATR 42-300 (2), ATR 72-500 (2), ATR 72-600 (12)
Isle of Man			
Carys Investment Group			Legacy 600 (1)
Hermes Executive Aviation			Legacy 600 (1)
Legacy Aviation			Legacy 600 (1)
Nexus Flight Operations			Legacy 650 (1)
Saby Finance			Legacy 600 (1)
VIPjet			737-700 BBJ (1), Legacy 650 (1)
Israel			
Arkia Israeli Airlines	AIZ	IZ	ATR 72-500 (3), 757-300 (2), E190-100IGW (1), E190-100LR (1), E190-200IGW (1), E190-200LR (1)
Ayit Aviation	AYT		DHC-6-100 (1)
CAL Cargo Air Lines	ICL	5C	747-400BCF (1), 747-400ERF (1), 747-400FSCD (1)
El Al Israel Airlines	ELY	LY	737-800 (15), 737-900ER (8), 747-400 (6), 747-400FSCD (1), 767-300ER (7), 777-200ER (6)
Israeli Air Force			707-300 (1), 707-300C (8), 707-300B (1)



Operator	IATA	ICAO	Model and Count
Israir	ISR	6H	A320-200 (3), ATR 72-500 (2)
Marvelair Aircraft Management			Legacy 650 (1)
Italy			
Aeronautica Militare Italiana	IAM		ACJ319-100 (3), A340-500 (1), ATR 42-400(MP) (3), ATR 42-500 (2), ATR 42-500(MP) (2), ATR 72-600(MPA) (4), 767-200ER (4)
Air Dolomiti	DLA	EN	E190-200LR (10)
Air Italy	AEY	I9	737-300 (2), 737-700 (3), 737-800 (6), 767-200ER (1), 767-300ER (3)
Alitalia	AZA	AZ	A319-100 (22), A320-200 (44), A321-100 (12), A330-200 (14), A340-500 (1), 777-200ER (11)
Alitalia CityLiner	CYL	CT	E170-200LR (15), E190-100LR (5)
Blue Panorama Airlines	BPA	BV	737-300 (2), 737-400 (1), 737-800 (2), 767-300ER (3)
Cargolux Italia	ICV	C8	747-400FSCD (4)
Meridiana fly	ISS	IG	MD-82 (6), MD-83 (1)
Mistral Air	MSA	M4	ATR 72-200F (1), ATR 72-500 (4), 737-300QC (2), 737-400 (1)
Neos	NOS	NO	737-800 (6), 767-300ER (3)
SW Italia	CSW	IU	747-400FSCD (1)
Ivory Coast			
Air Côte d'Ivoire	VRE	HF	A319-100 (2), A320-200 (1), ACJ319-100 (2), Dash 8-Q400 (4)
Ivoirienne de Transports Aériens	IVN		727-200F (1)
Lyca Cargo			727-100C (1)
République de Côte d'Ivoire			ACJ319-100 (1), Fokker 100 (1)
Jamaica			
Fly Jamaica Airways	FJM	OJ	757-200 (1), 767-300ER (1)
Japan			
Air Do	ADO	HD	737-700 (9), 767-300 (3), 767-300ER (2)
AirAsia Japan	WAJ	DJ	A320-200 (2)
Amakusa Airlines	AHX	MZ	ATR 42-600 (1)
ANA - All Nippon Airways	ANA	NH	A320-200 (10), 737-700 (7), 737-800 (36), 767-300 (12), 767-300BCF (1), 767-300ER (25), 767-300ERBCF (7), 767-300ERF (4), 777-200 (19), 777-200ER (8), 777-300 (7), 777-300ER (22), 787-8 (36), 787-9 (13)
ANA Wings	AKX	EH	737-500 (19), Dash 8-Q400 (21)
Busujima Trust			737-700 BBJ (1)
First Flying			DHC-6-400 (2)
Fuji Dream Airlines	FDA	JH	E170-100SE (1), E170-100STD (2), E170-200LR (2), E170-200STD (6)
HAC - Hokkaido Air System	NTH	HC	Saab 340B Plus (3)
Ibex Airlines	IBX	FW	CRJ200ER (2), CRJ701ER (2), CRJ702 (1), CRJ702ER (5)
J-Air	JLJ	XM	CRJ200ER (8), E170-100STD (17), E190-100STD (2)
JAL - Japan Airlines	JAL	JL	737-800 (50), 767-300 (7), 767-300ER (32), 777-200 (12), 777-200ER (11), 777-300 (4), 777-300ER (13), 787-8 (25), 787-9 (4)
Japan Air Commuter	JAC	JC	Dash 8-Q400 (9), Saab 340B (2), Saab 340B Plus (7)

Operator	IATA	ICAO	Model and Count
Japan Air Self-Defence Force			747-400 (2), 767-200ER (8)
Japan Coast Guard			Dash 8-Q300(MPA) (9), Saab 340B(SAR) (4)
JCAB Flight Inspection			Dash 8-Q300 (1), Saab 2000 (2)
Jetstar Japan	JJP	GK	A320-200 (20)
JTA - Japan Transocean Air	JTA	NU	737-400 (11), 737-800 (2)
NCA - Nippon Cargo Airlines	NCA	KZ	747-400FSCD (5), 747-8F (8)
Oriental Air Bridge	ORC	OC	Dash 8-Q200 (2)
Peach Aviation	APJ	MM	A320-200 (17)
RAC - Ryukyu Air Commuter	RAC		Dash 8-Q100 (3), Dash 8-Q300 (1), Dash 8-Q400C (2)
Skymark Airlines	SKY	BC	737-800 (26)
Solaseed Air	SNJ	6J	737-800 (12)
Spring Airlines Japan	SJO	IJ	737-800 (3)
StarFlyer	SFJ	7G	A320-200 (9)
Vanilla Air	VNL	JW	A320-200 (9)
Jersey			
Blue Islands	BCI	SI	ATR 42-300 (3), ATR 42-500 (1), ATR 72-500 (1)
Jordan			
Air Arabia Jordan	JAD	9P	A320-200 (2)
Arab Wings	AWS		Legacy 650 (1), Lineage 1000 (1)
Barq Aviation	BUR		L1011-100 (1), L1011-500 (2)
Fly Jordan	FJR		737-300 (2)
Jordan Aviation	JAV	R5	A320-200 (3), 737-300 (4), 737-400 (2), 767-200ER (3)
Jordan Gate Airlines			727-200 (1), 737-200 (1)
Royal Falcon	RFJ	RL	A320-200 (1), 737-400 (1)
Royal Jordanian	RJA	RJ	A310-300F (1), A319-100 (4), A320-200 (6), A321-200 (2), A330-200 (2), ACJ318-100 (1), 787-8 (5), E170-200LR (3), E190-200IGW (2)
Royal Wings	RYW	RY	A320-200 (1)
Kazakhstan			
Air Almaty	LMY		727-200F (1)
Air Astana	KZR	KC	A319-100 (1), A320-200 (8), A321-200 (4), 757-200 (5), 767-300ER (3), E190-100AR (9)
Aspan Jet Airlines			Legacy 650 (1)
Berkut	BEC		ACJ320-200 (1), 757-200 (1), Challenger 850 (1), Tu-134AK (1), Tu-134SH (1)
Caropan Company			Challenger 850 (1)
Comlux KZ	KAZ		ACJ321-200 (1), ACJ330-200 (1), Challenger 850 (1), Legacy 650 (3)
Euro-Asia Air	EAK	6Z	CRJ701 (1)
Halyk Air	BEK	Z9	Fokker 100 (8)
InvestAvia	TLG	IV	CRJ100ER (1), Do328-300 (2), Fokker 100 (4)
Jet Airlines	SOZ		Tu-134B3 (1)
Kaz Air Jet	KEJ		Tu-154M (1)
Kazairtrans	KUY		Tu-154M (1)
Kazakh Air Force			Tu-134AK (1)
Kazaviaspas	KZS		Tu-134A3 (1)
Kazaviaspas	KZS		Tu-134A3 (1), Tu-154M (1)
Khozu-Avia	OZU		Challenger 850 (1)
Prime Aviation	PKZ		ACJ320-200 (1), 737-700 BBJ (1), Dash 8-Q300 (1)





Operator	IATA	ICAO	Model and Count
SCAT Airlines	VSV	DV	737-300 (2), 737-500 (3), 737-700 (1), 757-200 (4), 767-300ER (1), CRJ200ER (3), CRJ200LR (3)
SkyBus (Kazakhstan)	BYK	7S	CRJ100ER (1)
Sunkar Air			737-300 (1)
Kenya			
748 Air Services	IHO		Dash 8-100 (5), Dash 8-Q400 (1)
Aberdair Aviation			EMB 120ER (1)
AeroSpace Consortium	AKQ		727-200F (1)
African Express Airways	AXK	XU	CRJ200LR (1), DC-9-30 (1), EMB 120ER (1), EMB 120RT (1), MD-82 (2)
Airkenya	XAK	P2	DHC-6-300 (3), Dash 7-100 (2), Dash 8-100 (1)
AirTraffic Africa			EMB 120ER (1)
ALS - Aircraft Leasing Services		K4	Dash 8-100 (8), ERJ 135LR (2), ERJ 145MP (1)
Astral Aviation	ACP	8V	727-200F (1), DC-9-30CF (1)
Bluebird Aviation (Kenya)	BBZ		Dash 8-100 (4), Dash 8-Q400 (2), Dash 8-Q400PF (5), Fokker 50 (2)
DAC East Africa		JX	CRJ200LR (1), Dash 8-100 (1), Dash 8-300 (1), Dash 8-Q200 (1), Dash 8-Q400 (2)
Fanjet Express			Fokker 50 (1)
Fly SAX	EXZ	B5	CRJ100ER (1), DC-9-10 (2), Dash 8-100 (1), F28-4000 (1), MD-83 (1)
Fly540	FFV	5H	CRJ100ER (2), CRJ200LR (2), Dash 8-100 (1)
Freedom Airline Express			CRJ200LR (1), EMB 120ER (2), EMB 120RT (3)
Jubba Airways (Kenya)	JBW	3J	A320-200 (2), 737-400 (1), Fokker 50 (1)
Kenya Air Force			Dash 8-100 (3), Fokker 70 (1)
Kenya Airways	KQA	KQ	737-300 (2), 737-300F (2), 737-700 (2), 737-800 (8), 787-8 (7), E190-100AR (15)
Pan African Airways			DC-9-30 (1)
Ribway Cargo Airlines			DC-8-73F (1)
Rudufu			Fokker 50 (3)
Safarilink Aviation	XLK	F2	Dash 8-100 (1)
Skyward Express	SEW		Dash 8-300 (2), Fokker 100 (1), Fokker 50 (9)
Trident Aviation			CRJ200ER (1), Dash 8-100 (3), Dash 8-300 (1)
Kiribati			
Air Kiribati	AKL		DHC-6-300 (1)
Kuwait			
Jazeera Airways	JZR	J9	A320-200 (7)
			A320-200 (11), A330-200 (5), A340-300 (4), ACJ319-100 (1), ACJ340-500 (2), 737-900 BBJ (1), 747-400M (1), 747-8 BBJ (1), 777-200ER (2)
National Legacy			Legacy 600 (1), Lineage 1000 (1)
Kyrgyzstan			
Air Bishkek	EAA	KR	A320-200 (1)

Operator	IATA	ICAO	Model and Count
Air Kyrgyzstan	LYN	QH	737-300 (1), 737-500 (1), Tu-154M (1)
Air Manas	MBB	ZM	737-400 (1), 737-800 (2)
Avia Traffic Company	AVJ	YK	737-300 (3)
Tez Jet Airlines	TEZ		BAe 146-200 (2)
Laos			
Lao Airlines	LAO	QV	A320-200 (4), ATR 72-500 (4), ATR 72-600 (3)
Lao People's Liberation Army Air Force			MA-60 (2), MA-600 (2)
Lao Skyway	LLL	LK	MA-60 (2)
Latvia			
airBaltic	BTI	BT	737-300 (7), 737-500 (5), Dash 8-Q400 (12)
Primera Air Nordic	PRW	6F	737-700 (2), 737-800 (4)
RAF-Avia	MTL		Saab 340AF (2)
SmartLynx Airlines	ART	6Y	A320-200 (10), A321-200 (1)
Lebanon			
A.A. Kassar Company			Legacy 650 (1)
Emerald Jets			Challenger 800 (1)
ImperialJet	IMJ		Challenger 850 (2)
MEA - Middle East Airlines	MEA	ME	A320-200 (13), A321-200 (2), A330-200 (5)
Med Airways	MED	7Y	CRJ200ER (1)
WOL - Wings of Lebanon	WLB	W7	737-300 (1)
Lesotho			
MGC Airlines	MSU	7D	CRJ200ER (1)
Libya			
Afriqiyah Airways	AAW	8U	A319-100 (3), A320-200 (5), A330-200 (2), A330-300 (1)





Operator	IATA	ICAO	Model and Count
Air Libya	TLR		RJ100 (1), 737-500 (1), BAe 146-200 (1)
Buraq Air	BRQ	UZ	737-400 (2), 737-500 (1), 737-800 (2)
EACS Aviation			A340-200 (1)
Ghadames Air Transport	GHT		A320-200 (1)
Libyan Airlines	LAA	LN	A320-200 (6), A330-200 (3), ATR 42-500 (1), CRJ900LR (2)
Libyan Civil Aviation Authority			DHC-6-300 (1)
Libyan Wings	LWA	YL	A319-100 (2)
Petro Air	PEO		DHC-6-300 (8), DHC-6-400 (1), Dash 8-300 (1), Dash 8-Q300 (1), E170-100LR (2), E170-100STD (1), F28-2000 (1)
United Aviation (Libya)			Challenger 850 (1)
Lithuania			
Avion Express	NVD	X9	A319-100 (1), A320-200 (8)
Charter JETS	LTC		737-700 BBJ (1), Challenger 850 (1)
DOT - Danu oro transportas	DNU	R6	A320-200 (1), ATR 42-300F (2), ATR 42-300QC (1), ATR 42-500 (3), ATR 72-200 (1), ATR 72-200QC (2), Saab 340A (2)
GetJet Airlines	GJT		737-400 (3)
Grand Cru Airlines	GCA		A320-200 (1), 737-300 (1)
KlasJet			CRJ200LR (2)
Small Planet Airlines	LLC	S5	A320-200 (9)
Luxembourg			
Cargolux	CLX	CV	747-400ERF (2), 747-400FSCD (6), 747-8F (13), ACJ318-100 (1), ACJ319-100 (6), ACJ340-300 (1), 737-700 BBJ (1), 737-900 BBJ (1), 767-300ER (1), Legacy 600 (1), Lineage 1000 (1)
Global Jet Luxembourg	SVW		737-700 (2), 737-800 (4), Dash 8-Q400 (9), ERJ 145LU (2)
Luxair	LGL	LG	ERJ 145LU (2)
Luxaviation	LXA		Legacy 600 (3)
Macau			
Air Macau	AMU	NX	A319-100 (4), A320-200 (3), A321-200 (10)
Jet Asia (Macau)			Challenger 800 (1), Legacy 600 (1)

Operator	IATA	ICAO	Model and Count
Macau Landmark Hotel			Lineage 1000 (1)
Madagascar			
Air Madagascar	MDG	MD	A340-300 (1), ATR 72-500 (2), ATR 72-600 (2), 737-300 (1), 737-800 (1), DHC-6-300 (3)
Malawi			
Malawian Airlines	MWI	3W	737-700 (1), Dash 8-Q400 (1)
Malaysia			
AirAsia	AXM	AK	A320-200 (79)
AirAsia X	XAX	D7	A330-300 (22)
AsiaCargo Express	CXM		737-400F (2)
Berjaya Air	BVT	J8	Dash 7-100 (3)
Eaglexpress Air Charter	EZX	9A	747-400 (3), 747-400M (1)
Firefly	FFM	FY	ATR 72-500 (12), ATR 72-600 (8)
Jet Premier One			ACJ319-100 (2), ACJ320-200 (1)
Malaysia Airlines	MAS	MH	A330-200F (4), A330-300 (15), A380-800 (6), 737-800 (56), 747-400 (1), 747-400FSCD (2)
Malindo Air	MXD	OD	ATR 72-600 (11), 737-800 (14), 737-900ER (6)
MASwings	MMW	MY	ATR 72-500 (10), ATR 72-600 (4), DHC-6-400 (6)
Neptune Air	NEP	N7	727-200F (1), 737-300F (1)
Raya Airways	RMV	TH	727-200F (3), 757-200PCF (1), 767-200SF (1)
Royal Malaysian Air Force	RMF		737-700 BBJ (1), F28-1000 (1)
Suasa Airlines			737-400 (1)
Sultan of Johor			737-800 BBJ (1)
Weststar Aviation Services			727-100 (2)
Maldives			
FlyMe (Maldives)	VQI	VP	ATR 72-500 (2)
Maldivian	DQA	Q2	A320-200 (1), A321-200 (1), DHC-6-200 (1), DHC-6-300 (8), Dash 8-200 (1), Dash 8-Q200 (1), Dash 8-Q300 (7)
Mega Maldives Air	MEG	LV	767-300ER (4)
Trans Maldivian Airways	HUM	M8	DHC-6-100 (1), DHC-6-200 (1), DHC-6-300 (39), DHC-6-400 (3)
Mali			
République du Mali			727-200 (1)
Malta			
Air Malta	AMC	KM	A319-100 (2), A320-200 (6)
Air X Charter	AXY		737-500 (3), Challenger 850 (4), Legacy 600 (3)
Blue Square Aviation	BSG		Challenger 850 (1)
Comlux Aviation Malta	MLM		A330-200 (1), ACJ319-100 (1), SSJ 100LR (1)
Hi Fly Malta	HFM	5M	A340-300 (2)
Hyperion Aviation			A319-100 (1), Legacy 600 (1)
JetMagic	JMK		737-700 BBJ (2), 757-200 (1)
Maleth-Aero	MLT		737-300 (2), 737-300QC (1), 737-400 (1), 737-700 BBJ (1)
Medavia	MDM	N5	Dash 8-100 (1), Dash 8-Q300 (1), Do328-100 (1)
Privajet	PVJ		737-700 BBJ (1)
VistaJet (Malta)			Challenger 850 (5)
VVB Aviation Malta	SGO	IV	737-400 (3), 767-200ER (1)
Marshall Islands			
Air Marshall Islands	CWM		Dash 8-100 (1)





Operator	IATA	ICAO	Model and Count
Mauritania			
Mauritania Airlines International	MAI	L6	737-500 (2), 737-700 (1), ERJ 145LR (1)
Mauritius			
Air Mauritius	MAU	MK	A319-100 (2), A330-200 (2), A340-300 (6), ATR 72-500 (3)
Mayotte			
EWA Air	EWR	ZD	ATR 72-500 (1)
Mexico			
Aéreo Calafia	CFV		EMB 120ER (2), ERJ 145ER (3)
Aero Owen	OWN		EMB 120RT (1)
Aeromar Airlines	TAO	VW	ATR 42-300 (4), ATR 42-500 (10), ATR 72-600 (2)
AeroMéxico	AMX	AM	737-700 (19), 737-800 (34), 777-200ER (4), 787-8 (9)
AeroMéxico Connect	SLI	5D	E170-100LR (5), E170-100STD (5), E170-100SU (3), E170-200LR (3), E190-100AR (2), E190-100IGW (4), E190-100LR (27), ERJ 145LR (9), ERJ 145LU (8)
Aeronaves TSM	VTM		CRJ200ER (2), DC-9-30F (6), MD-82 (4), MD-82SF (2), MD-83SF (1)
AeroUnion	TNO	6R	A300B4F (4), 767-200ERF (2)
Armada de México			Dash 8-Q200 (1)
Banco de México			Dash 8-Q200 (2)
Estafeta Carga Aerea	ESF	E7	737-300F (4), CRJ100ERF (2)
FirstJet			Legacy 600 (2), ERJ 145LR (1)
FlyMex	NTG		Do328-300 (2)
Fuerza Aérea Mexicana	FAM		727-100 (2), 727-200 (3), 737-200 (1), 737-300 (2), 737-800 (1), 757-200 (1), 787-8 (1), ERJ 145RS (2), ERJ 145SA (1)
Global Air	DMJ		737-200 (3)
Interjet	AIJ	40	A320-200 (43), SSJ 100B (22)
LATAM Cargo Mexico	MAA	M7	767-300ERF (1)
Magnicharters	GMT		737-200 (2), 737-300 (8), 737-500 (1)
MAYAir	MYI	7M	Fokker 50 (1)
MCS AeroCarga	MCS		CRJ200ERF (3)
Omnifly	OMF		Lineage 1000 (1)
Policia Federal Preventiva			727-200 (3), 727-200F (1), Do328-300 (1)
Redwings (Mexico)			Legacy 600 (1)

Operator	IATA	ICAO	Model and Count
TAR Aerolíneas	LCT	YQ	ERJ 145ER (1), ERJ 145LR (10)
TATSA - Transportes Aéreos Terrestres			DHC-6-300 (4), Dash 8-100 (2)
Transpals Aéreo	TPM		Legacy 600 (1)
VivaAeroBus	VIV	VB	A320-200 (19), 737-300 (7)
Volaris	VOI	Y4	A319-100 (17), A320-200 (42), A321-200 (4)
Moldova			
Aerotrans Cargo	ATG	F5	747-400BDSF (2)
Air Moldova	MLD	9U	A319-100 (1), A320-200 (2), E190-100AR (1), E190-100LR (1)
Classica Air	NBL		Legacy 650 (1)
Continental Airways (Moldova)	CNW		747-200FSCD (1)
FlyOne	FIA	5F	A320-200 (1)
Pecotox-Air	PXA		A300-600RF (2)
SkyPrimAir	KPM		A320-200 (2)
Tandem-Aero	TDM	TQ	EMB 120RT (1)
Mongolia			
Aero Mongolia	MNG	M0	Fokker 50 (3)
Hunnu Air	MML	MR	ATR 72-500 (1), Fokker 50 (3)
MIAT - Mongolian Airlines	MGL	OM	737-800 (3), 767-300ER (3)
Montenegro			
Montenegro Airlines	MGX	YM	E190-100LR (1), E190-200LR (3), Fokker 100 (2)
Morocco			
Air Arabia Maroc	MAC	3O	A320-200 (5)
Dalia Air	DLI		Legacy 600 (2), Lineage 1000 (1)
Royal Air Maroc	RAM	AT	737-300F (1), 737-700 (6), 737-800 (30), 737-800 BBJ (1), 747-400 (1), 747-400M (1), 767-300ER (4), 787-8 (4), E190-100AR (4)
Royal Air Maroc Express	RXP		ATR 72-600 (5)
Mozambique			
LAM - Linhas Aéreas de Moçambique	LAM	TM	737-500 (1), 737-700 (1), Dash 8-Q400 (3), E190-100AR (2)
MEX - Mocambique Expresso	MXE		EMB 120RT (2), ERJ 145MP (3)
Solenta Aviation Mozambique			ATR 42-500 (1)
Vale Mozambique			ERJ 145ER (1)
Myanmar			
Air KBZ	KBZ	K7	ATR 72-500 (5), ATR 72-600 (4)
Air Mandalay	AMY	6T	ATR 72-200 (1), ERJ 145ER (2)
APEX Airlines	SO		ATR 72-600 (1)
Asian Wings Airways	AWM	YJ	ATR 72-500 (3)
FMI Air	FMI	ND	Challenger 800 (1), CRJ200LR (2)
Golden Myanmar Airlines	GMR	Y5	ATR 72-600 (2)
MAI - Myanmar Airways International	MMA	8M	A319-100 (3), A320-200 (1)
Mann Yadanarpon Airlines	MYP	7Y	ATR 72-600 (2)
Myanmar Air Force			ATR 42-500 (1), ATR 72-500 (2)
Myanmar National Airlines	UBA	UB	ATR 42-300 (1), ATR 72-200 (2), ATR 72-500 (1), ATR 72-600 (3), 737-800 (3), E190-100LR (2), F28-4000C (1)
Yangon Airways	AYG	YH	ATR 72-200 (2), ATR 72-500 (1)
Namibia			
Air Namibia	NMB	SW	A319-100 (4), A330-200 (2), ERJ 135ER (4)



Operator	IATA	ICAO	Model and Count
Westair Aviation			ERJ 145MP (1)
Nauru			
Nauru Airlines	RON	ON	737-300 (6), 737-300F (1)
Nepal			
Buddha Air	BHA	U4	ATR 42-300 (3), ATR 72-500 (3)
Himalaya Airlines	HIM	H9	A320-200 (1)
Nepal Airlines	RNA	RA	A320-200 (2), 757-200 (1), DHC-6-300 (2), MA-60 (1)
Saurya Airlines		S1	CRJ200ER (1)
Tara Air			DHC-6-300 (3), DHC-6-400 (1)
Yeti Airlines	NYT	YT	Jetstream 41 (7)
Netherlands			
Corendon Dutch Airlines	CND	CD	737-800 (3)
Denim Air ACMI	DNM	G6	ERJ 145MP (1), Fokker 100 (1)
KLM cityhopper	KLC	WA	E170-200STD (2), E190-100STD (30), Fokker 70 (15)
KLM Royal Dutch Airlines	KLM	KL	A330-200 (8), A330-300 (5), 737-700 (18), 737-800 (25), 737-900 (5), 747-400 (5), 747-400M (15), 777-200ER (15), 777-300ER (12), 787-9 (6)
Martinair	MPH	MP	747-400BCF (1), 747-400ERF (3)
Royal Netherlands Air Force	NAF		DC-10-30F (2)
Transavia Airlines	TRA	HV	737-700 (8), 737-800 (36)
TUIfly (Netherlands)	TFL	OR	737-800 (5), 767-300ER (1), 787-8 (3)
New Caledonia			
Air Calédonie	TPC	TY	ATR 42-500 (1), ATR 72-500 (3)
Air Loyauté	VZR		DHC-6-300 (2)
Aircalin	ACI	SB	A320-200 (2), A330-200 (2), DHC-6-300 (2)
New Zealand			
Air Chathams	CVA	CV	Saab 340AQC (1)
Air Nelson	RLK		Dash 8-Q300 (23)
Air New Zealand	ANZ	NZ	A320-200 (29), 767-300ER (4), 777-200ER (8), 777-300ER (7), 787-9 (7)
Airwork	PST		737-300F (3), 737-400 (1), 737-400F (6)
Jetconnect	QNZ		737-800 (8)
Mount Cook Airline	NZM	NM	ATR 72-500 (11), ATR 72-600 (13)
Royal New Zealand Air Force			757-200 (2)
Nicaragua			
La Costeña	NIS		ATR 42-300 (2)

Operator	IATA	ICAO	Model and Count
Niger			
Escadrille Nationale du Niger			737-700 BBJ (1)
Nigeria			
Aero Contractors	NIG	NG	737-400 (1), 737-500 (2), Dash 8-Q200 (1), Dash 8-Q300 (1), Dash 8-Q400 (2)
Air Peace	APK		737-300 (4), 737-500 (4), Do328-300 (1)
Air Taraba			ERJ 145LR (1)
Airstream Aviation			737-200C (1)
Allied Air	AJK	4W	737-400F (3)
Arik Air	ARA	W3	A330-200 (2), 737-700 (9), 737-800 (4), CRJ1000ER (1), CRJ900ER (4), Dash 8-Q400 (4)
Azman Air	AZM		737-300 (2), 737-500 (2)
Bauchi State Government			ERJ 145LR (1)
Bristow Helicopters Nigeria	BHN		ERJ 135ER (2)
Caverton Helicopters	CJR	YC	DHC-6-300 (1), DHC-6-400 (1)
DANA - Dornier Aviation Nigeria	DAV	DO	Do328-100 (3)
Dana Air	DAN	9J	MD-82 (1), MD-83 (5)
Emirate Touch Aviation			727-200F (1)
First Nation Airways	FRN		A319-100 (2)
Hak Air			737-400 (5)
IRS Airlines	LVB	IS	Fokker 100 (4)
JedAir			737-200C (1)
Kabo Air	QNK		747-200 (2), 747-400 (2)
MaxAir (Nigeria)	NGL	VM	747-300 (4), 747-400 (3), Legacy 600 (1)
Med-View Airline	MEV	VL	737-400 (2), 737-500 (1), 767-300ER (1)
Mobil Producing Nigeria			DHC-6-300 (1)
Nigerian Air Force	NGR		ATR 42-400(MP) (2), 737-700 BBJ (1)
Odengene Air Shuttle Services	OHS		ERJ 145EU (1)
Overland Airways	OLA		ATR 42-300 (3), ATR 42-300QC (1), ATR 72-200 (3)
Prime Air Services			Do328-300 (1), Legacy 600 (1)
SkyBird Air	KYC		Do328-300 (3)
Skyjet Aviation Services			Legacy 600 (2), Legacy 650 (1)
TopBrass Aviation			Dash 8-Q300 (2)
United Nigeria			737-500 (1)

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Aircraft Details

CL-600-2B19

Type

7297

C/N

ZS-KEM

Registration

Operator

CemAir

Status

Active

IATA Code

CR1

Production Line

Bombardier CRJ-100/200

Exact Model

CRJ100LR

Engines

CF34-3A1

Age

16.91 yrs

Dates

24MAR1999: Delivery

Seats (Y / W / C / F / Total)

50 / 0 / 0 / 0 / 50

MTOW

24,091 kg / 53,112 lb

Wet-Lease

Operated for

Air Botswana

Historical Information

Former Operator

Comair (USA)

Former Registration

N720SW

Delivered to

Comair (USA)

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